

# AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED IN 1831.

PUBLISHED WEEKLY BY J. H. SCHULTZ & CO., AT NO. 9 SPRUCE ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.  
SECOND QUARTO SERIES, VOL. IX., No. 50.] SATURDAY, DECEMBER 10, 1853. [WHOLE No. 921, VOL. XXVI.

The Mechanical Engineering department of this paper will be under the charge of Mr. ZERAH COLBURN.

## PRINCIPAL CONTENTS.

Pacific Railroad.....	785
Prussian Railroad Accounts.....	787
Grand Trunk of Canada.....	787
Journal of Railroad Law.....	790
Finances of Virginia.....	791
Hydraulic Works at Niagara.....	791
Comparative Statement of Earnings and Cost of English and American Railroads.....	792
Michigan Southern Railroad.....	792-794
Stock and Money Market.....	793
Hempfield Railroad.....	797
North Carolina Railroad.....	798
Importations of Rails via Quebec.....	798

## American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., No. 9 SPRUCE ST.

Saturday, December 10, 1853.

ENTERED according to Act of Congress, in the year 1853, by EDWIN F. JOHNSON, in the Clerk's Office of the District Court of Connecticut.

### Railroad to the Pacific--Northern Route.

Its General Character, Relative Merits, etc.

By EDWIN F. JOHNSON, C. E.

(Continued from Page 772.)

#### COMPARISON OF ROUTES.

It has been stated, that if the mouth of the Columbia be made the terminus of the proposed road on the Pacific, the northern route is probably the best way to reach it. The point of divergence from this route is in the Clark's river valley, where that river emerges from the hill country, thence across the elevated prairie plain southerly, near to the junction of the Lewis' river with the Columbia, and along the Columbia to its mouth. The distance by this line to Astoria, although greater than to the straits of De Fuca, is evidently less, (as appears by an inspection of the map,) than by any other line which can be projected from Chicago to the same point, and it is also greatly superior in other respects. If the ground between the sources of the Spokane river and Clark's river is practicable it will afford a shorter route. This, however, does not seem to be probable, judging from the description of it by Father De Smet.

Mr. Whitney, who has been very active in drawing public attention to the important subject of a railroad to the Pacific, after canvassing various routes, came to the conclusion that it was best to approach the Pacific by the valley of the Columbia, and the route which he approves is represented on his map by a line drawn from Prairie du Chien, on the Mississippi, in Wisconsin, to the valley of White river or White Earth river, west of the Missouri, and thence to the valley of Salmon river, and down the latter and Lewis river and the Columbia, leaving the Columbia on the west side of the Cascade range, and from thence bearing northerly to the main terminus on Puget Sound.

The objections to this line, are the crossing of the Mississippi and Missouri at points where both are navigable by the larger class of river steamers, and where the expense will be very considerable. The overcoming of the Wind river or Black Mountains, near the head of White river, in reaching which, the line must previously pass through a very barren district of some extent, known as the *Mauvaise terres*. The impossibility of maintaining even a tolerably direct course, from the Black Mountains to Salmon river, in consequence of the direction in which the tributaries of the Yellow Stone and Missouri flow, and the number and height of the intervening mountains, the high range of the Bighorn being among the most prominent, and the probable great expense of effecting a descent along the Salmon river valley, judging from the descriptions of it furnished by Lewis and Clark, and others.

Added to this, the line will be longer undoubtedly, than the proposed route to De Fuca; a far greater amount of rise and fall must be encountered, and it will cost much more than the northern route. The country through which it passes is less valuable for settlement, and it does not present the very great advantage of a convenient connection with Lake Superior, and with the navigable portions of the Upper Missouri, the Clark's river, and the Columbia, which is offered by the northern route.

The character of the country through which this route must pass, after leaving the waters of White river; until it reaches those of Columbia, is very fully portrayed by Mr. Hunt, in Irving's As-

toria. This gentleman passed, in 1811, from the Shayan river to the head water of the Little Missouri, thence across, and along the Black Hills or Mountains on the north or west side, and across the Bighorn range to Wind river, the main west branch of the Bighorn river. From thence across near Fremont's Peak, to the Mad river branch of Lewis river.

He describes the Black Mountains as an "extensive chain, stretching from the Nebraska or Platte river, in a north-easterly direction, to the great north bend of the Missouri." They are composed chiefly of "sandstone," and are in many places "broken into savage cliffs and precipices," and were crossed with great difficulty, near the sources of the Little Missouri. From an elevated point in this chain, he described, at the distance of 150 miles, "the lofty range of the Bighorn Mountains, printing the clear horizon."

It is easy to see from this estimate of their distance, that the Bighorn Mountains must be very elevated, and this is proved by the difficulties which Mr. Hunt encountered in passing them. After reaching them he pursued a southerly course along their base for several miles, searching for some practicable defile, but on the 3d of September, finding that they "still stretched onward, presenting a continual barrier," he endeavored to "force a passage to the westward, but soon became entangled in rocks and precipices which set all efforts at defiance." The Mountains "seemed, for the most part, rugged, bare, and sterile," covered by a few scattered pines. Under the guidance of the Crow Indians, he at length effected a passage "through rugged defiles, up and down the crags and steep slopes of the Mountains."

From thence he continued on westwardly, over a "rugged region of hills and rocks," and along the valley of the Wind river, which was "rough and destitute of trees, with few signs of animal life," passing, as above stated, across to one of the sources of Green river, and thence to the Lewis river at the mouth of Henry's fork, near the three Tetons. When upon the Wind river, he was informed that by "following up that river, and crossing a single mountain ridge, he would come upon the waters of the Columbia," a tributary, undoubtedly, of Mad river,

The route next south of that, of Mr. Whitney, which has been proposed for reaching the mouth of the Columbia, is that usually followed by emigrants to Oregon, for reasons, principally, which make it objectionable as a route for a railroad, viz: the almost total absence of timber for nearly its whole extent.

This route, which is delineated on the map, follows the valley of the Platte river, thence through the south Pass, across the head waters of the Colorado, and the tributaries of the Great Salt Lake; thence into the valleys of Lewis river, and the Columbia to the Pacific.

The objections to this route are of a character much more serious than to the one last described. It crosses the Mississippi and Missouri rivers, particularly the latter, at lower and more difficult points. The summit at the south Pass, which is 7,490 feet, barometric measurement, above the sea, is probably higher than that of Lewis Pass by upwards of 2000 feet, if the latter has not been under-rated. To the west of the South Pass, at the crossing of Bear Mountain, is another summit 700 feet higher, and so much higher than the Lewis Pass as to give to it a colder temperature in winter, notwithstanding its more southern latitude. Even the South Pass has probably as low a temperature in winter as the Lewis Pass, if not lower, owing to its greater elevation and to its being farther removed from the mild region on the Pacific.

In proceeding westward from Green river, in latitude 42° N., the valley of Lewis river may be entered without crossing any intervening ridge, or ascending much from the former. This route leads through Pierre's Hole in a northerly direction along the valley of Mad river to the mouth of Henry's fork, thence southerly to Fort Hall, etc. From the descriptions given of it by Parker, and also by Hunt, it does not appear to be practicable for a railroad; but were it otherwise, it would not very materially change the character of this route as compared with others.

The Lewis river, for much of its distance, flows in a deep chasm, the walls of basaltic rock on either side being very high, rising in one place, for 60 miles, to from 100 to 800 feet. Its valley is, for the most part, a sterile region of volcanic rocks and barren sands, almost destitute of vegetation.

Col. Fremont says that for 300 miles to the west of Fort Hall "there does not occur a fertile spot of ground sufficiently large to produce the necessary quantity of grain or pasturage enough to allow even a temporary repose to the emigrants."

He states, that "the main river is enclosed with mural precipices, which form its characteristic feature along a great portion of its course. A melancholy and strange looking country, one of fracture and violence and fire."

Mr. Hunt, in Irving's Astoria, describes this region as a dreary desert of sand and gravel, "a vast trackless plain destitute of all means of subsistence." "Here and there is a thin scanty herbage, insufficient for the pasturage of horse or buffalo." These "treeless wastes," he continues, "are even more barren than the naked upper prairies on the Atlantic side, and must ever defy cultivation." Farnham, when near the Boise river, on his way west, "had not seen an acre of land since leaving Fort Hall, capable of produc-

ing the grains or vegetables," so sterile was the face of the country.

A railroad located along this valley, instead of pursuing the short route followed by the emigrants, over the Blue mountains, which by Col. Fremont's measurement, are 5000 feet high in the lowest place, must follow the circuitous course of the river. This, with the great deviations from a direct course at other points, must obviously render the entire distance very much greater than by the northern route.

This route, after leaving the lower and only fertile portion of the valley of the Platte, passes through a comparatively barren and impracticable region for nearly the entire distance to the Blue Mountains. Lieuts. Turner and Hunter, who traversed the Platte valley in 1845, state that from Long. 98½° W. to Fort Laramie, "the country is barren and desolate, being without timber or grass, except on the very banks of the streams, and very little even there. From Laramie, for some distance west, the road runs over hills of coarse gravel." \* \* "The only grass is along the borders of the streams, with very little timber any where, except on some of the high banks, which are perfectly inaccessible to wagons."

"The Sweetwater is bounded on both sides by mountains of granite, frequently intersected by dykes of trap, not timbered. Distance between mountains on each side 20 miles, but this district of country is very barren, producing nothing but wild sage." "In the Pass there is no timber, and none in its vicinity, except on the Wind river mountains, which are inaccessible to wagons."

The cost of the road on this route will be vastly greater than upon the northern route, owing to its greater length, the absence of timber, the general character of the surface, and the impossibility of approaching it at any intermediate points with materials for its construction, or with provisions for the sustenance of laborers. When built it will be more expensive to operate. It will not pass through a region attractive to settlers, and will not, consequently, have the amount of way business to sustain it, which will be realized upon the northern route, and like the one last described, has not the advantage of a connection with Lake Superior.

These are the only routes proposed, and probably the only ones practicable, which have a terminus on the Pacific in either of the territories of Oregon or Washington.

Before proceeding to consider the character of the routes which lead to the more southern Ports of San Francisco and San Diego, and which more naturally, perhaps, take their departure from St. Louis, or some point farther south, it will be proper to give a general topographical view of the country between the Mississippi and the Pacific, in that direction.

Between the Mississippi and Missouri rivers on the one side, and the eastern base of the Rocky Mountains on the other, lies a vast plain, inclined at such an angle as to give to its western edge or border, where it meets the mountains, an elevation of 5000 feet, and upwards, above the sea. The surface of this plain, as a whole, is not enough varied to give to it the character of being diversified with hills and valleys of any very great height or depth. It has what is termed, a rolling or undulating surface, a character which is

only interrupted by the many broad and deep ravines, through which flow the numerous tributaries of the Mississippi and Missouri, which have their source in the mountains, and which from their great descent, amounting to from four to seven feet per mile, flow with great rapidity, and are, in consequence, so obstructed with bars and shoals as to be unsuited for navigation; and from the character of their channels, can probably never be improved for that purpose, except at a cost not justified by any resulting benefit.

The eastern portion of this great plain, which is from two hundred to three hundred miles in breadth, is very fertile, is tolerably well supplied with timber, and is capable of affording sustenance to a very large population.

The western portion becomes less and less fertile as it approaches the mountains, where, from its great elevation, and other causes, it presents so barren and sterile an aspect, as to have received the name of the *American Desert*. This portion is almost wholly destitute of timber, and in many places, is destitute of water, except what is furnished by the larger streams which flow from the mountains. So bare of timber is this portion, that in the valley of the Platte, for four hundred miles, it is, from the authorities quoted above, almost entirely wanting, a peculiarity not confined to that river, but is said to be common to all, and even when they lose this character and are fringed with trees, as is occasionally the case, the latter are found to consist mainly of the cottonwood, (*populus canadensis*), which afford an inferior timber, and is but poorly, if at all, adapted to the purposes of railroad construction.

The Rocky Mountains, south of Fremont's Peak to the Mexican boundary, may be said to consist of two ranges, between which flow the waters of the Colorado, which discharges into the Gulf of California. The eastern or main range on reaching the Lat. of 39° N. nearly, is accompanied in its course south by another parallel range, at no great distance from it on the east, and between the two lies the narrow valley drained by the Rio Grande, (or Bravo,) Del Norte, which, after forming for some distance the boundary between the United States and Mexico, discharges into the Gulf of Mexico.

These mountains are strictly what their name denotes, viz: *Rocky*. They are very sparsely covered with timber, irregular in form, and unequal in elevation, rising to a height from 9000 to 12000 feet above the level of the sea, with occasional peaks that rise to a still greater height, and which are covered with perpetual snow.

The valley of the Rio Grande Del Norte is elevated at its northern extremity from 7000 to 8000 feet above the level of the sea, and at the point where it emerges from the eastern range of mountains at El Paso, its elevation is about 4000 feet. The descent of its valley above El Paso varies from 5 to 7 feet per mile; the river is, consequently, not navigable. The valley is narrow and has within it many fertile spots, and contains a Spanish and Indian population of several thousand.

The valley of the Colorado has a descent to the south even greater than that of the Rio Grande Del Norte. Although narrow at first it widens as it proceeds south, until it occupies most of the space between the main range of the Rocky Mountains and the Pacific.



At its source, in Lat. 48° N., its elevation above the sea is upwards of 7000 feet. Col. Emery informs us that "there is little doubt of its being always navigable for steamboats up to within 3 or 4 miles of the mouth of the Gila, where it is 600 feet wide. He was also informed that it was probably to a great extent susceptible of navigation to a point seven days travel up from the junction, which would bring it within two or three hundred feet of the level of the sea in Lat. 34° N. This gives to the valley above an inclination on the average of nearly ten feet in the mile, and an elevation, probably, between the latitudes of 38° and 39° N., of about 3000 feet. Its eastern and western border in this latitude has an elevation of 4000 to 5000 feet.

The mountains which bound it on the west, like those on the east, are high in places but the chain appears to be more broken. They skirt the Great Salt Lake on the east, and are there known as the Wausatch range. From a point near the Vegas of Santa Clara, in Lat. 38° N., they pursue a westerly course until they strike the high range of the Sierra Nevada, in California. This latter then forms the western boundary of the Colorado Basin, being the only range between it and the Pacific, and can be passed near San Diego at an elevation, according to Col. Emery, of 3000 feet.

West of the Colorado valley, and east of the Sierra Nevada Mountains, and south of the mountains which form the southern boundary of the valley of Lewis river, is a wide space known as the "Great Basin," its surface elevated, as appears by the measurement of Col. Fremont, from 4000 to 5000 feet above the sea. The lowest Passes in the Nevada Mountains have an elevation nearly twice as great as the interior of the basin, and the higher portions rival those of the Rocky Mountains in height, their summits being, at all seasons, white with perpetual snow.

Between these mountains and the sea, north of Lat. 34, is another parallel range of mountains, which are high and known as the *Coast Range*. Between the two lie the valleys of the San Joaquin and Sacramento, the former descending to the north, and the latter to the south; their waters meeting in the Bay of San Francisco, which opens to the sea by a passage through the Coast range, presenting a strait of ample dimensions easy of access, and a sufficient depth of water in the basin, in most places, for the purposes of ocean navigation.

The Nevada Mountains, on both of their slopes, are covered with a dense forest which extends in places on the west side, on to the plains below.

The Coast range is thinly clothed with timber. The valleys between are fertile and productive wherever the ground can be irrigated, a method of culture which is necessary, owing to the almost total absence of rain in summer.

Fortunately in the principal of these valleys the San Joaquin, the streams are numerous, and on the side of the Sierra Nevada, are ample for the purpose.

East of the Nevada the "Great Basin," is characterized by its sandy and barren plains, by the number and rugged character of the mountains that are scattered over its surface, by its destitution of timber, by the fewness of its fresh water springs and streams, by its containing the Great Salt Lake, and many minor lakes, some salt, and

some otherwise, the most of which have no apparent connection with each other, and none with the sea; a region where the rains are limited and the evaporation so great as to drink up all the moisture, leaving but little for the sustenance of plants or animals.

To this description, the country near the Great Salt Lake where the Mormons are located is somewhat of an exception. In this section there are some fertile strips of land in the valleys, which, if not naturally productive, are made so by the somewhat expensive process of irrigation. Aside from this, the whole of the Great Basin is a dreary and probably irreclaimable desert, supporting but few animals, and a few miserable specimens of humanity, the most abject of the Indian race to be found anywhere in North America.

Thornton, who passed through a portion of this barren waste, speaks of the "destitution of moisture," describes its "sterility and dreariness as fearful, as though a strange curse were brooding over the whole scene."—"A country which has nothing of a redeeming character." "It was enlivened by the murmur of no streams but was a wide waste of desolation where even the winds had died."

Col. Fremont, when struggling through the deep snows of winter on its western border, under the Nevada mountains, was informed by a Christian Indian that "the country directly across to the Great Salt Lake had repulsed, by its sterility all attempts to penetrate it." When traversing, subsequently its eastern limits he states that "fertility of soil and vegetation does not extend far into the Great Basin," that it is "called a desert, and from what he saw of its sterility may be its prominent characteristic." "Humanity there appears in its lowest form," subsisting on "seeds, insects and roots." "The rabbit is the largest animal," and, "the wild sage the only fuel and timber, and the only covering often for the feet and legs in cold weather."

Bryant, who passed centrally through this region, from the Great Salt Lake by the way of Humboldt or Mary's river, to California, thus speaks of it:

"A fine white sand, impalpable almost as ashes mingled with which is a scoriaceous gravel, in some places soft and yielding to the hoofs of our mules, in others baked and compact almost to the hardness of brick, are the leading characteristics of the soil, if soil it can be called." When at the distance of ninety miles the scene is represented as one of "dismal and oppressive solitude," "no voice of animal, no hum of insect disturbing the tomb-like solemnity. All was silence and death. Like the other elements sustaining animal and vegetable life, the winds seemed stagnant and paralyzed by the universal dearth around." A vast plain of 70 to 80 miles in width, which they were compelled to cross, was "utterly destitute of water and of vegetables or any sign that shrub or plant had ever existed above its snow like surface." In other places, wild sage, grease wood, and a few shrubs of smaller size, for the most part leafless, "were the only vegetations, except at long intervals a little grass, these mostly dry, and this only in the immediate vicinity of the few springs to be met with, whose water was often too brackish for use." At the distance of two hundred miles, after taking an extensive view from the summit of a

mountain, he states "that no words can describe the awfulness and grandeur of this sublime desolation." At about three hundred and thirty miles there appeared "little or no variation in the general character of the country and its productions." At 450 miles no improvement. The nearest mountains present the same rugged and barren aspect.

At 575 miles he states that "every thing around is sufficiently cheerless and desolate to depress the most buoyant temperament. The sable and utterly sterile mountains, the barren and wild plain, incapable of sustaining either insect or animal, presents a dreariness of scenery that would be almost overpowering in its influences, but for the hope of more pleasing scenes beyond."

This entire region is supposed at no very remote period to have been under the influence of volcanic fires, and such doubtless is the conclusion which the general character of the surface would seem to justify. But it should be remembered that time can effect but very slight changes in the surface of a country in the absence of rain or moisture, and that this element appears to have been almost entirely wanting in the region in question, and this is one reason probably in common with the milder climate, why the entire country from the eastern slope of the Rocky mountains to the Nevada mountains exhibits indications of volcanic action of a date apparently more recent than is observed in those sections where the rains are frequent and the cold and the frosts at times severe.

The change in the face of nature which in another climate would be effected in a short period, would here take years to accomplish, owing to the almost entire absence of the causes by which such changes are produced.

The region lying south of the Great Basin and west of the Colorado, extending to the Nevada mountains, and in the vicinity of San Diego, approaching near to the Pacific, is less mountainous but equally barren and sterile. Colonel Emory, who was one of the gallant band who accompanied Gen. Kearney in his march to California and whose attention to the physical characteristics of the country, and care and perseverance in determining the astronomical positions, and elevations of numerous points on the route under the privations of a forced march through a hostile and most inhospitable region, is worthy of remark and commendation, says after reaching the mountains west of the Colorado, that the "desert over which we had passed from water to water, is an immense triangular plain, bounded on one side by the Colorado, on the west by the Cordilleras of California, on the south by the Tecati chain of mountains and the Colorado mountains." On the north its boundaries are undefined but he supposes "from accounts of trappers and others who have attempted the passage from California to the Gila by a more northern route, that it extends many days travel beyond the chain of barren mountains which bound the horizon in that direction."

This desert, he states, is "chiefly covered with floating sand, the surface of which in many places is white with diminutive spinelas and every where, over the whole surface, is found the large and soft muscle shell."

The valley of the Gila for at least one hundred miles east of the Colorado appears to be of a similar character. He says that "wherever we mount,

ed to the table lands to cut off a bend of the river, we found them dreary beyond description, covered with black basalt, with a few intervals of dwarf growth of *Larrea*. Now and then a single acacia raised its solitary form and displayed its verdure in the black expanse." Again "the ground as far as the eye can reach is strewn with black shining well rounded pebbles. The *Larrea* even was scarcely seen, and dreariness seemed to mantle the earth. The dust rose in volumes as the party advanced." "The hills and mountains appeared entirely destitute of vegetation." As they approached the Colorado, the table lands and plains were almost entirely of sand." "Sand hills flank both sides of the Gila formed by sand brought down by the winds from the valley of the Colorado," "the course of the Colorado was tracked by clouds of flying sand. West of this great sand plain, in the mountains near San Diego, the country is still destitute of vegetation. When in the midst of the mountains he states that "barrenness and desolation still hold their reign," and that the "barren waste" extends to the very shores of the Pacific.

Col. Fremont who traversed this region from Walkers Pass in the Nevada mountains to the Vegas of Santa Clara, five hundred and fifty miles, also describes it as being little better than a sandy desert, a region of loose, heavy sands, "hot and yellow," in which the traveller "suffers from an intolerable thirst, where the heated air seems to be entirely deprived of moisture." "A desolate and revolting country, where lizards were the only animals, and the tracks of the lizard eaters the principal sign of human beings." Other authorities concur in giving to this portion of the valley of the Colorado a similar character. This whole region in fact including the Great Basin being nearly or quite destitute of water, is irreclaimable even by irrigation and must forever remain, probably, the Sahara of North America.

The vast region lying to the east of the Great Basin and the southern part of the Colorado, including the Rocky mountains and what has heretofore been designated on the Maps as the "American Desert" on their eastern slope, although not presenting so melancholy and forbidding an aspect as the portion west of the Colorado, is still in a great measure a barren waste, made up of sterile plains, and mountains of naked rock.

Col. Emory whose route was by the way of Bents Fort and Santa Fe, thence down the valley of the Del Norte and across to that of the Gila, states that "the country from the Arkansas to this point (junction of the Gila with the Colorado) more than twelve hundred miles, in its adaptation to agriculture has peculiarities which must forever stamp itself upon the population which inhabits it." "In no part of this tract of land can the rains of heaven be relied upon to any extent for the cultivation of the soil. The earth is destitute of trees and in great part also of any vegetation whatever.

A few feeble streams flow in different directions from the great mountains, which in many places traverse this region. These streams are separated sometimes by plains and sometimes by mountains without water, and without vegetation, and may be called deserts, so far as they perform any useful part in the sustenance of human life. The cultivation of the earth is therefore confined to those

narrow strips of land which are within the level of the waters of the streams, and wherever practised in a community with any success or to any extent involves a degree of subordination and absolute obedience to a chief, repugnant to the habits of our people."

The region thus described is applicable not merely to the portion passed over, but to the whole of New Mexico. The province of Chihuahua in the Mexican territory, and California as far north as the Sacramento, all of which, he states, are, as far as the best information goes, "the same in the physical character of their surface, and differ but little in climate or products."

Col. Emory "made many inquiries as to the character of the vast region of country embraced in the triangle formed by the Colorado of the West, the Del Norte and the Gila." From all that he could learn, this country "does not differ materially in its physical character from New Mexico, except perhaps being less denuded of soil and vegetation.

The sources of the Salinas, the San Francisco, Ariel San Carlos, and Prieto, tributaries of the Gila take their rise in it. About their head waters and occasionally along their courses are presented sections of land capable of irrigation." "The whole extent, except on the margins of the stream is said to be destitute of forest trees."

Farnham who crossed the upper portion of the Colorado valley from St. Vrain Fort to Salt Lake describes it as a "desert of arid plains and minor mountains," the "great grave of vegetation." The face of the country, even in the valley of Green river is a "dry, barren and undulating plain." He could find nothing in nature from which to derive a pulse of pleasure, nothing "save the vastness of desolate wastes, the tombs of the washings of the floods!" The course of the Grand river, to the point where he crossed it, was nearly due west. From thence, according to Kelly, a man who was familiar with its course and that of the Colorado, it "continued in a west by north course for one hundred and sixty miles where it breaks thro' the Anahuac ridge." The cliffs at this point on both sides are "several hundred feet high and over hanging within them is a series of cascades which roar like Niagara, when the river is swelled by the freshets of June." After passing this point it moves with a "dashing, foaming current" to where it meets with Green River and forms the Colorado of the West. "From the junction of of these branches, the Colorado has a general course from the north east to the south west, of seven hundred miles to the Gulf of California.—Four hundred of this seven hundred miles is on almost unbroken chasm with perpendicular sides hundreds of feet in height, at the bottom of which the waters rush in continuous cascades."

"The country on each side of its whole course is a rolling desert of brown, loose earth on which the rains and dews never fall."

This description, he says, was confirmed by many persons at Fort David Crockett, and sustains fully the general description by Col. Emory.

It is also confirmed by the testimony of Dr. Lyman, who travelled in 1841 from Santa Fe to Upper California. For the first one hundred and fifty miles to the Rio San Juan, the pasturage and water were both good upon the mountain sides and valleys. After crossing the San Juan in about lat.

38° N., and continuing along the Grand to the Green River tributaries of the Colorado, he states, that "the country becomes generally sterile and broken in every direction by deep ravines with perpendicular banks, opposing almost insurmountable obstacles to the traveller's progress, compelling him to search many days before he can find a feasible passage."

He states that the water in nearly every instance west of the Colorado to the California mountains, a distance of seven hundred to eight hundred miles, "is either very brackish and slimy or so excessively saline as to have, in many instances, a fatal effect on animals and men." In some few instances good water was found. Sometimes the vast barren plains were destitute of any water, having hardly a blade of grass, or a square mile of surface! Occasionally wild sage was found and this and the stems of equally naked bushes, were the only food for animals. Occasionally, also, a few diminutive "canes" and sand grass were found in the dry beds of rivers, "over these dreadful wastes scathed of God, was scattered the wild squash which only served to tantalize the perishing traveller with the remembrance of fruitful fields and pleasant homes."

In journeying down the Colorado the traveller "comes to a spot called Santa Clara where a little herbage and water are found. Near this point the banks rise and the river is buried deep in roaring chasms. The traveller ascends, therefore to a point called the Salt mountain and thence descends to Las Vegas where there are about one hundred acres of salt grass. There a desolate plain commences and extends about one hundred miles, partially covered with loose sand piled into ridges, curiously waved over the general surface and in the ravines, whirled by the winds into a great variety of fantastic forms. These ravines are very numerous and deep, very difficult to ascend and descend; parched caverns into which the drifting sands are driven by the heated winds. On all this plain there is no vegetation except a little salt grass on the margin of a few stagnant pools of brackish and sulphurous waters." From thence to the California mountains the soil was quite hard, the water continued the same and the whole face of the country equally devoid of vegetation.

Such being the general character of the country, the capacity of the several streams for supplying the means for irrigation, becomes an important element in estimating the population which can be sustained within its limits.

Col. Emory measured the Del Norte at Tomi, lat. 36° 48' N. and found it thirty yards wide only at the surface, and averaging less than two feet in depth. This was its entire section on the first of October, except two zequias or channels for irrigation of 9 by 2 feet each, at a place distant three hundred miles in a direct line from its source! At the Pimos village, the waters of the Gila, over three hundred miles from its source were entirely abstracted from their bed by the zequias formed for irrigation! The Great Colorado of the west, at the place where it was forded by Gen. Kearney below the mouth of the Gila was only 1500 feet wide on the 25th of November. Its greatest depth in the channel was only four feet, and it flowed at the very moderate rate of 1½ miles per hour.

Altogether equal to a volume of water two hun-



ded feet wide, and 20 feet deep running at the slow rate of one and a half miles per hour, for the drainage of 80,000 square miles of surface, less probably than *one seventieth part* of the drainage from the same extent of surface on the slopes of the Alleghanies between the same latitudes.

To what degree this amount, small as it is, would be reduced by the increased evaporation and absorption consequent upon the diversion of the waters of the main rivers and their tributaries to any very considerable extent for irrigation, will be left to others to estimate. It will be found, doubtless, that the population which can be sustained will not depend solely upon the extent of surface which is "within the level of the waters of the streams," but will be governed also by the quantity of water which the streams are able to furnish.

Whatever portion of the surface can thus be rendered available, and it must be very limited, it is very certain that the more desirable and accessible regions to the north will be first occupied, and that they will contain and support a population manifold greater on a given surface, whose pursuits will be of a character to contribute in a much greater degree to the support of expensive means of inter-communication.

To be continued.

#### Prussian Railway Accounts.

The official survey for the year 1852, just published by the Prussian Government, gives a statement of averages, highly interesting to the public, as affording a means of comparing the management of railway business here and abroad. In the subjoined summary the Prussian calculations are reduced to English measure and currency.—Total length of railway, 1803 miles, including 456 miles of double line. Cost per mile £12,852, including £1,556 for locomotives, carriages &c. Maximum £26,720; minimum £6,040. Average number of locomotives, three for every 10 miles; of passengers' carriages, 7; of vans and wagons, reckoned as four-wheeled, 57 per 10 miles of rail. Average run per locomotive in the year, 13,291 miles. Consumption of fuel, 9 cubic feet of wood and 3,250 lbs. of coke per 100 miles of journey. Maximum of wood alone, 310 cubic feet, and of coke alone, 4,529 lbs. per 100 miles of journey. Average distance of passengers' journey, 27½ miles, of transport of goods, 47 8-10. Average passenger's fare, eighty-eight-hundredths of a penny per mile, or 7s. 4d. per 100 miles; average freight per ton of goods, 13s. 6d. per 100 miles; Receipts: for fares and passenger's luggage £561 8s.; for freights of good and cattle, £753 6s.; for sundries, £60 6s.; total, £1,375 per mile of line. Expenses £637 per mile of line. Of this sum, 32 per cent. for superintending the line and stations, 5½ per cent. for directorship and general management, 62½ per cent. for cost of transport. Gross expense equal to 46½ per cent. of gross income. Average cost of superintending line and stations, and of general management and directorship £238 16s. per mile of line. Average cost of transport, £8 18s. 6d. per 100 miles of journey. Total cost, £15 12s. 2d. per 100 miles of journey. Surplus, £738 8s. per mile of line, or 6¾ per cent. of capital invested. Reserve fund, £221 12s. per mile of line. Maximum dividend paid: Magdeburg-Leipsick, 20 per cent; Upper Silesian line, 10 per cent.

#### Wheat forwarded over Michigan Central Railroad.

The transportation of wheat over the Michigan Central road for the month of September was 309,537 bushels. The largest shipment, 42,779 bush., was from Kalamazoo; the next, of 28,916 bush., from Jackson. The whole amount moved in September 1852, was 160,049 bushels, showing a gain during the present season of nearly 100 per cent. over that of last year.

#### Grand Trunk Line of Canada—Political vs. Commercial Routes.

We copy the following correspondence from a recent number of the *Halifax Sun*:

QUEBEC, Sept. 23d, 1853.

To the Hon. Francis Hincks.

My Dear Sir:—The success which has thus far attended our united efforts in promoting the construction of a great line of railway from Lake Huron to the Gulf of the St. Lawrence, induces me not to abandon the hope that we may yet succeed in uniting the Lower Provinces with Canada by a continuation of the Main Trunk Road from Riviere du Loup, through New Brunswick and Nova Scotia, to the Atlantic.

Our acquaintance as you know, began with the Quebec and Halifax project, and my partners feel with me a degree of national pride in endeavoring to carry out that important work, so as to give to Canada and the other Colonies an Atlantic port of their own. I feel assured that, with your able assistance, it may yet be accomplished.

Largely as we are interested in Canadian railways, you know that, for any mere purpose of our own, Portland has a splendid seaport, open at all seasons; but we have a strong desire to see the North American Colonies connected together by a railway through their own territories, terminating at Halifax.

Having just returned from New Brunswick, where I had an opportunity of ascertaining the feeling in that Province, and having there met several of the leading men from Nova Scotia, I have now to suggest a course by which I hope to see the proposed railway constructed.

Nova Scotia and New Brunswick may, I think, be looked to for a subsidy of £20,000 sterling per annum, say £40,000 from both together, for as long a period as would purchase 3½ terminable annuities.

If Canada will vote £30,000 sterling per annum, the Imperial Government would, I have no doubt, contribute a like amount annually and at the same time guarantee the annuities to be created on the strength of the annual amounts so voted.

The Grand Trunk ought to assume whatever surplus might be required to complete the line; if necessary, make any such surplus a preference stock.

In the event of my suggestions meeting the approval of yourself and colleagues, immediate steps should be taken to communicate with his Excellency, the Governor General, and enlist his Lordship's co-operation, which I am sure he will gladly afford, in bringing the matter again under the consideration of the Imperial authorities.

Believe me, my dear sir,

Yours faithfully,

WILLIAM JACKSON.

In connection with the above, is a letter from Mr. Jackson to the Lieutenant Governor of Nova Scotia, in which, referring to the letter addressed to Mr. Hincks, he says—

"I have taken this course advisedly; and hope to work out a great result—unless the Grand Trunk of Canada take up the whole system, Nova Scotia will for years be debarred from making Halifax the great mart of the east—for Maine is unable to make her lines; she can give no State aid, and her cities and citizens are too poor; and British capital can not be got to aid her."

We have frequently taken occasion to refer to the railway movements in the British Provinces, for the purpose of pointing out the danger there was, that the system which they were proposing to themselves would take its character and general features from *political*, rather than *commercial*, considerations, and the disastrous consequences which must result from overlooking the *only* safe guiding principle in the construction of public works.

Railways are purely *commercial* enterprises, and

should be undertaken only when there is a prospect of a direct *remunerative* return upon their cost from their traffic. The inability to show a prospective income, should be taken as a conclusive reason against a project. It is the only rule that can protect the public from loss, and individuals from ruin. People do not build railroads from motives of philanthropy, nor out of kindness to a particular locality, any more than they build ships, and steam engines, without some useful and profitable end. A good reason is always *supposed*, though it may not always exist. The chief cause of the success of railroads in the United States, has been owing to the fact, that, as a general rule they have been undertaken precisely as have been other branches of business, and not till a good case of *profit* has been made out. Both the State and National Governments ignore all connection or interference with them, and the people, left entirely free in the premises, act from a sense of *self-interest* alone, which in ordinary affairs is the only safe guide.

In the Provinces, this principle, which has saved the railroad interest of this country, exerts only a limited and partial influence. In the first place, the need of railways is very slight, compared with what is felt in the United States. The settlements in the Lower Provinces, are, with a very few exceptions, upon *tide* water. They have already the best possible means for sending their products to market. The settled portion of Canada is confined to a narrow strip of fertile land on the banks of the St. Lawrence, which is now navigable its whole length; so that railroads either in the Upper, or Lower Provinces, would not effect any considerable change in the present routes, or modes, of transportation of property; both of which are well adapted to the wants and convenience of the great mass of the people.

The desire to build railroads in the Provinces, therefore, have not grown out of that urgent and well defined want, which generally lies at the foundation of the projects in the United States. They have been undertaken rather in imitation of this country, than for other reasons. The Provincials, seeing the wonderful progress of their neighbors, naturally ascribed it to the most obvious cause, railroads, and have undertaken these works as a means to secure similar results, overlooking the fact that with us, railroads were *results* of causes that only exert a limited force with them. The primary impulse being a different one, it was reasonable to expect that different aims and objects should control the routes, and mode of construction.

As the want of railroads was too little felt to enlist, to any considerable extent, private capital in their construction, the necessity of providing the requisite means, as well as the management of the enterprises, devolved upon the Provincial Government. As governments are not organized for the purpose of engaging in *commercial* enterprises, it is natural that *political* considerations should exert a paramount influence in their management of railroads, as in other affairs. It is not too much to say, probably, that the Grand Trunk line was planned, and is being executed, rather as a political, than commercial measure, as a means of promoting more intimate political and social relations between the Provinces, ending, it was hoped, in the consolidation of the whole into one

government. This, from the first, has been held out to the public, as the grand object of this work, and it is upon the strength of this sentiment, that Mr. Jackson relies for success, in extending the road to New Brunswick and Nova Scotia, around the northern frontier of the State of Maine.

We must expect that the Provincials, lacking these guiding influences which have been the great safeguards in the United States, will commit some pretty serious mistakes. As a government work, a railroad from Quebec to Lake Huron, with a branch to Portland, may be properly undertaken. Economically built and conducted, it may not be an unprofitable enterprise. But the idea of pushing it beyond Quebec, in direction of the Lower Provinces, is the sheerest folly in the world. The arguments in its favor are assumptions without the least truth to support them. They are based upon the idea that the road would constitute the commercial outlet of the Canadas, and make Halifax the great eastern port for all the Provinces. The absurdity of such assumptions will be seen by the fact that, were the road built, flour, which is the great article of export from Upper Canada, could not be sent over it from Montreal to Halifax, for less than two dollars per barrel: while the same could be sent from the former city to New York or Portland for less than one third the sum. It would cost more than double to send it from Quebec to Halifax than to either of the American ports named. All articles of Canadian produce can be sent through the United States, in bond, without being subject to a penny of local taxation or duty. In addition to this, it is well known that the basis of a treaty between the United States and Great Britain has been already agreed upon, which has been sent to England for approval, which provides for free trade between the Canadas and the United States, in all the great staples of the two countries. This treaty will undoubtedly become a law in a few months, so that this country will take the next Canadian harvest, either for exportation or consumption, free of duty. Now when Canadian wheat can be sent to Liverpool, via New York, for seventy-five cents per barrel, we do not believe it will go by way of Halifax, at a cost of \$2 50 per barrel, for the purpose of giving employment to a Canadian road, or for the purpose of building up a Nova Scotia seaport. Commerce is cosmopolitan, and is by no means fastidious about routes, or individuals, but always employs such as accomplish its objects in the shortest time and at the least cost.

The attempts, therefore, to construct a railroad from Quebec to Halifax, is entirely unwarranted by any commercial want or necessity, and could serve no useful political end. Reciprocity with the United States will effectually supercede all plans for the consolidation of the Provinces. Their great want is free access to the markets of this country. These opened, all arguments in favor of consolidation, or of a more intimate union, will cease to have any influence. They are now listened to, not because they have any soundness in them, but because the present isolated condition of the Provinces lead them to listen to any plans for relief. The natural relations of the Lower Provinces are with the Eastern States: those of Canada with New York. Between themselves there is no substantial bond arising out of

geographical, political, commercial, or social relations.

The through business of a railroad between Montreal and Halifax would be nothing. The local business for the greater part of the distance between Quebec and Halifax, would not pay for the fuel for the locomotives. Upon a portion of the line of about 180 miles, the population does not much, if any, exceed 10,000. Even this pitiful number would contribute nothing toward the support of the road. For a long distance at either end, the road would run parallel to, and near the waters of the River and Gulf of St. Lawrence, which afford much better means for the conveyance of merchandize, than a railroad. That portion of the line removed from navigable waters is of the most sterile character, and incapable of development. In a business point of view, therefore, the project of Mr. Jackson is as utterly chimerical, as would be the building of a road from Quebec to Hudson's Bay. Should the proposed road be made a part of the Grand Trunk, it will inevitably ruin the whole concern. Its stock would not be worth a penny. Should it be constructed as a distinct work, three years would not elapse, before the rails would be taken up, to be applied to some useful purpose.

Personally, we should be very glad to see the proposed road constructed. Having been a resident of the eastern part of Maine, we should take great pleasure in the progress of any work that would tend to develop its resources, as the proposed road could not fail to do. But as a faithful journalist, we are bound to warn the public against a scheme that can only end in loss and disaster. A warning voice is now particularly called for in all enterprises in this country, where Englishmen are the leading parties. Of all foreigners, they understand the least of it, and are the most liable to be imposed upon and deceived. Their maxims and habits of thought will not allow them to learn anything about this country. They never make our system of public works a study, for the purpose of forming a correct opinion of the value of a particular project in which they are solicited to embark. If the scheme be made to look well on paper, (and what one cannot,) and has the endorsement of Hon. Mr. So-and-so, they swallow it with all the gravity that they do their dinner. If it turns out badly, they resign themselves to their ill luck, and never attempt to penetrate the mystery of the failure. Having been bitten through their own fault, they lay down the maxim, that every thing of the kind is bad, and forthwith wind up their investments in that quarter. In the matter of investments in this country, the conduct of the English presents a striking contrast to that of other Europeans. The Germans and French, who are the principal buyers of our securities, make the United States, its political and social condition, its resources, its systems of public works, and the relations they sustain to the wants of the people, the routes and tendency of commerce, subjects of careful and analytical investigation and study. The opinion of Mr. So-and-so may be very valuable, or very worthless, just as he knows something, or nothing. They do not rely upon his opinion, but study the subject on the spot, where it can be only properly studied. They look through one medium only, that of self-interest. Their judgments are not colored by pre-

judices for, or against us. They look only at the evidence in the case. The consequence has been, that they have become our best customers, and have had their pick of our securities. We do not believe that one insolvent security of any railroad company in the United States has been sent to Germany for five years past.

Mr. Jackson and his associates have made a pretty strong dash at this country for new beginners. It would seem to be a dictate of sound sense to close up present risks and see how they are to turn out, before encouraging new ones, the expediency of which are entirely assumed. The point to which they should now direct attention, is to make the most out of the works already undertaken by connecting them, by a line through the State of Maine. The construction of this link is indispensable to the prosperity and the highest usefulness of the roads of both the Upper and Lower Provinces. It would undoubtedly prove a remunerative project. A considerable portion of it would traverse a densely inhabited country, capable of supplying a large traffic, and of contributing largely to the cost of the road. Such a road is the only thing that can save the New Brunswick line. By building it, the contractors of the Grand Trunk will preserve their reputation and their money. By constructing the proposed road from Quebec to Halifax, they will most certainly lose both.

#### Journal of Railroad Law.

THE RESPONSIBILITY OF COMMON CARRIERS AS AFFECTED BY THE ACTS OF OWNERS.

A common carrier of goods is in the nature of an insurer of such goods as he has undertaken to carry. But he is not so liable unless the goods have been duly delivered to him for transportation, and unless they are left in his possession, without any undue interference on the part of the owner. Yet, when by the acceptance of goods for the purpose of transportation, the carrier has once become legally liable for their safety, he is not discharged, in consequence, of any particular care, once his property, which the owner may have voluntarily assured. Such care must, of course, be assented to by the carrier, and must be bestowed in such a manner as shall not in any way conflict with his general supervision and regulations in regard to the transportation of goods. But the law will not release the carrier from his strict responsibility, unless there have been some unequivocal words, or deeds, on the part of the owner, by means of which, the legal relation of the two parties may fairly be considered to be essentially changed. It sometimes occurs that the consignee of goods takes charge of them on their passage, and before they have arrived at their ultimate place of delivery. In such a case, the risk of the carrier is definitely ended. His responsibility for goods ceases when his control over them ceases.

These remarks were suggested by the case of *Bertram & Co. vs. the New Haven Railroad Company*, lately tried in the Superior Court of this city. In January, 1852, the plaintiff claimed to have delivered to defendants at Albany, 83 head of cattle, to be carried to New Haven. They should have reached their place of destination on Sunday, after the alleged delivery, but did not do so until the following Wednesday. At that time one of the cattle was found to be dead, and three were in such a state that it was necessary to kill



them. The defence set up in an action to recover damages in this case, was, that the cattle had never been actually delivered to the defendants, but that they had let six freight cars to the plaintiffs, at \$35 each, for the purpose of transporting their cattle from Albany to New Haven, under their own care, and that in consequence of a heavy snow-storm defendants had not been able to carry them to New Haven any sooner than they had done. To this it was answered, that had the defendants constructed a temporary platform at New Haven, much delay might have been avoided, and that there was delay before the storm. Judge Bosworth charged the jury, that the cattle certainly did not seem to have been under the exclusive care of the defendants. The plaintiffs were to take care of the cattle and were not to pay freight, strictly so called, but instead thereof, they had hired six of the freight cars for their exclusive use. For any injuries suffered by the cattle in consequence of their having been hooked or trampled upon, while on their way, the defendants could not be considered liable. Whether they had used due diligence in transporting the cattle to New Haven was a question of fact for the decision of the jury. If the defendants had been in this respect guilty of any negligence, they were holden to the plaintiffs therefor. Should the jury consider the defendants to be liable, they should deduct from the gross amount of damages the price due for the use of the cars, and also the value of the killed cattle, whatever that value may fairly be deemed. *Verdict for plaintiffs, \$394.*

## RAILROAD RULES.

The Worcester and Nashua, like many other railroad companies, charge 5 cents additional when tickets are bought in the cars, instead of being bought at the station. A passenger in one of their trains, who had previously resisted the rule, lately refused again to pay the 5 cents additional, and was requested by the conductor to leave the train at a stopping place. To this course the passenger interposed a very decided objection, and when a forcible ejection was attempted, he summoned friends to the rescue, and a riot ensued. The obstreperous passenger was prosecuted in Worcester, and fined \$10 with costs.

## Virginia.

## FINANCIAL OPERATIONS OF THE BOARD OF PUBLIC WORKS.

The Enquirer publishes a synopsis of the financial operations of the Board of Public Works with the State Treasury, during the fiscal year ending 30th September, 1853, transmitted by the Second Auditor to the Governor, in conformity with law. We extract therefrom the following:

The receipts of the Treasury, on account of the Internal Improvement Fund, amounted to \$5,087,428 27; and with the balance on hand, at the commencement of the last fiscal year, made an aggregate of \$5,102,478 23. There was disbursed, during the same period, \$5,010,632 59, leaving a balance in the Treasury, on the 1st of Oct., 1853, of \$91,845 64.

The sum of \$425,947 06 was received on account of dividends, bonus, and interest on the productive investments of the Fund, and premiums on loans obtained. This amount is \$8,341 61 more than was received from the same sources during the year ending 30th September, 1852.

There was received on account of registered and coupon bonds, the sum of \$4,050,486 87. Deduct from said amount the sum of \$23,500, an investment made by the Board of the Literary

Fund, and \$200 returned—it having been improperly received—and the increase of the outstanding public debt, during the last fiscal year, amounts to \$4,026,786 87.

The aggregate outstanding public debt of the Commonwealth, on the 1st Oct., last, after deducting the amount redeemed, as per exhibit of the Sinking Fund, is ascertained to be \$18,041,775 50.

It is deemed proper here to state, though not mentioned in the annexed statements, that the equated value of the productive investments, held by the Internal Improvement Fund, and the Commonwealth proper, to obtain which the debt of the Commonwealth was incurred, is estimated at \$8,121,500. By equated value is meant that amount, which, at six per cent., yields the revenue of these stocks. Therefore, the outstanding debt of Virginia, on the 1st of October, 1853, less the above value of investments, is \$9,920,275 50.

The disbursements on account of loans to Internal Improvement Companies, to be redeemed in thirty-four years, amounted to \$1,700,300. The sum of \$2,149,552 56 was paid on account of subscriptions and appropriations for purposes of Internal improvement.

The Internal Improvement Fund possesses productive investments amounting to \$5,636,226 80, which is an increase of \$1,993,212 56 over the amount held at the end of the fiscal year for 1852.

The Commissioners of the Sinking Fund, organized under the act passed March 26th, 1853, and in conformity to the 29th section of the 4th article of the constitution; upon principles which insure the payment of the interest, and the gradual extinction of the public debt of the Commonwealth. The establishment of this fund should and must necessarily place the credit of the Commonwealth upon the highest ground. Of the public debt existing on the 1st day of January, 1852, there was authorized to be redeemed certain certificates amounting to \$127,900. Of this amount there has been redeemed \$114,566 67, and the residue the holders thereof have not presented for redemption. The interest upon the amount thus authorized to be redeemed stopped on the 1st August last, the time advertised for its redemption.

The balance in the Treasury to the credit of the sinking fund on the 1st day of October, 1853, is \$13,754 83.

## Improvements at the West---Hydraulic Works at Niagara Falls.

Being recently on a leisure excursion at the west, I spent a few days in the neighborhood of that wonder among the natural curiosities of the world—the mighty, majestic Niagara. The tide of fashionable visitors which flows every summer upon this greatly favored locality, had ebbed—the summer birds had departed, and I had room to look around, and ponder upon the wonderful capabilities with which God and nature have endowed this place.

Niagara is fast becoming a business village. Mechanics are building houses and shops, a great number of which are going up, and everything appears to be new and flourishing. I was much struck with the hydraulic canal, which is now in course of construction at the Falls.

The project was started by a few enterprising individuals, who enlisted some influential men in New York city in the project, among them ex-Mayor Woodhull, who is president of the Company. The work appeared to be prosecuted with great vigor and rapidity, and I could not help admiring the energy and industry with which the engineers and contractors devoted themselves to the work, as well as the machinery which was brought to bear upon it. A drilling machine, worked by steam, was of wonderful efficiency in

excavating the earth. It would drill between one and two feet per hour, a six-inch hole, and when the bottom of the canal was reached, a keg of powder was put into the cavity, and an immense amount of rock thrown out by the blast.

I accompanied Mr. Whitney, the chief engineer of the works, and Mr. Avery, one of the leading men at the Falls, over the lands of the company, which lie between Ontario street and the river's edge, extending nearly a mile along the high bank, below the Falls, a most beautiful spot of ground, containing about seventy-five acres, exclusive of a strip extending entirely across the village, for the canal, which is one hundred feet wide to the river, about half a mile above the Falls. The earth and stone excavated for the canal are taken below to fill up and build out the wharves, which will have sufficient depth of water to float any of the lake vessels or steamers. Here the company will make about five acres of land which must become very valuable, as the river from thence to Buffalo can be made navigable at very little expense. There is an island in the river, a short distance from the mouth of the canal, and a reef runs from the island to the shore a little below the canal, which is so situated that a perfectly safe harbor is formed.

A company was chartered by the last Legislature of New York, for the purpose of constructing a canal to connect lakes Erie and Ontario, and engineers are now on the ground making the necessary surveys, and it is said that the ship canal will, without doubt, start from the Niagara river, but a short distance above the mouth of the canal which is now constructing here—and such a junction would add wonderfully to the business of the Niagara village. Another suspension bridge is to be constructed across the Niagara, about 2 miles below the Falls at Bellevue, where the Great Western and Canada Railroad crosses the river on a suspension bridge. These enterprises, present and prospective, have had the usual effect of public improvements; quite a village has sprung up within a short time, and there can be no doubt that in a few years the whole ground from thence to Niagara village, will be filled with factories, stores and houses, constituting a large and flourishing city, upon one of the most delightful spots in the State of New York. Besides all this, Niagara is one of the most healthful places on the continent.

The west is a mighty country, and the advance of a year there, is equal to the slow march of a century elsewhere.

L. S. H.

## Business of Covington, Ky.

The Journal says: The extensive rolling mills of Jordan & Comp., and Morrell, Shoemaker & Comp., are in full blast and worked to their utmost capacity. Hart & Dryer's car manufactory and A. L. Greer & Co's locomotive works will soon be in full operation. These four establishments will give employment to about one thousand persons. In addition there are numerous tobacco factories, planing mills, saw mills, glass works, bagging factory, foundry, &c., all, we believe, at work and doing good business. By the first of January next the principal streets of the city will be lighted with gas, and about the same time the splendid suspension bridge which is to connect us with Newport, will be completed. Added to all we have the Cov. and Lex. railroad, which, with 38 miles in operation has already sensibly affected the business of the city, and which, as it stretches itself south, making the im-

portant connections contemplated, will add vastly to the business and general prosperity of Covington.

## American Railroad Journal.

Saturday, December 10, 1883.

### English and American Railroads.

Below will be found a statement presenting in contrast, the cost, earnings, and ratio of earnings upon their cost, of several English and American roads. We have taken the leading, and we believe some of the best paying English lines. The American roads in the table may be considered as a fair average of the best class roads in this country. The earnings of the former are averaged from the earnings of the last week in October, and are probably very nearly correct. The English, is reduced to Federal currency, by estimating the pound at five dollars.

Comparative statement showing the mileage cost, earnings for October, per cent. of earnings for October, and market value, of several English and American Railroads:

Name of Road.	Miles in operation.	Cost.	October earnings.	p. ct. Market value.
<b>BRITISH.</b>				
London and North Western.	563½	149,246,805	1,089,806	108½
Great Western.	319½	50,650,185	405,496	81
Great Northern.	288	68,792,880	416,710	81½
South Eastern.	288½	61,729,200	365,840	60
York and North Midland.	682	93,788,680	623,131	47½
Eastern Counties.	322	79,475,845	408,850	12½
Midland.	438¾	92,236,825	645,941	13½
<b>Total British.</b>	<b>2,947</b>	<b>610,930,340</b>	<b>3,904,791</b>	<b>.006839</b>
<b>AMERICAN.</b>				
New York and Erie.	497	33,070,863	552,996	.01670
New York Central.	604	33,850,423	555,945	.01642
New York and New Haven.	61	4,978,487	93,252	.01878
Hudson River.	144	10,527,654	163,352	.01456
Michigan Southern.	817	6,886,794	220,804	.03205
Michigan Central.	280	8,614,138	200,168	.02332
<b>Total American.</b>	<b>1,803</b>	<b>97,980,419</b>	<b>1,776,417</b>	<b>.01814</b>

It will be seen that taking the above roads as a standard, railway investments in the United States are three times as productive as in Great Britain.

The earnings of American railroads for October, are slightly above the average for the year. We do not know whether such be a fact with English roads.

The cost of American roads is not fairly represented in the above statement. Of the total cost of the New York Central R. R. \$8,885,000 was a bonus payable in bonds divided among the Stockholders, and added to the capital account, by the terms of the recent consolidation of the various companies which make up that line. Previous dividends of a similar character had been made by the several roads. A portion of the consolidated stock is for contemplated roads, and is not yet paid in; so that the actual cost to the Stockholders of the above road, will not exceed \$18,000,000. This road is probably earning more than 33 per

## Railway Share List.

Compiled from the latest returns—corrected every Wednesday—on a par valuation of \$100.

NAME OF COMPANY.	Miles open.	Capital paid in.	Funded debt.	Total cost of road and equipment.	Gross Earnings for last official year.	Net Earnings for last official yr.	Dividend for do.	Price of Shares.
Atlantic and St. Lawrence. . . Maine.	150	1,538,100	2,973,700	5,150,278	254,743	113,520	none	80
Androscoggin and Kennebec. . . "	55	809,378	1,016,500	2,064,458	140,561	80,053	none	30
Kennebec and Portland. . . "	72	952,621	29,80	2,514,067	168,114	100,552	none	41
Port., Saco and Portsmouth. . . "	51	1,355,500	123,884	1,459,384	208,669	6	6	97
York and Cumberland. . . . . "	20	285,747	341,100	718,605	23,946	11,256	none	24
Boston, Concord and Montreal. N. H.	93	1,649,278	622,200	2,540,217	150,538	79,659	none	35
Concord . . . . .	35	1,485,000	none.	1,485,000	305,805	141,836	8	104½
Cheshire . . . . .	54	2,078,625	720,900	3,002,094	287,768	55,266	5	48
Northern . . . . .	82	3,016,634	.....	.....	328,782	163,075	5	47½
Manchester and Lawrence. . . . "	24	717,543	.....	.....	.....	.....	6½	88
Nashua and Lowell. . . . .	15	600,000	none.	651,214	132,545	51,513	8	109
Portsmouth and Concord. . . . .	47	.....	.....	1,400,000	.....	.....	none	.....
Sullivan. . . . .	26	.....	.....	673,500	.....	.....	none	21
Connecticut and Passumpsic. . . . Vt.	61	1,097,600	550,000	1,745,518	.....	.....	none	33½
Rutland . . . . .	120	2,486,000	2,429,100	5,577,467	495,397	266,539	none	25
Vermont Central. . . . .	117	8,500,000	3,500,000	12,000,000	.....	.....	.....	13½
Vermont and Canada. . . . .	47	1,500,000	.....	1,500,000	Leased to the Vt. C.	.....	cent.	100
Western Vermont. . . . .	51	392,000	700,000	.....	Recently opened.	.....	none	.....
Vermont Valley . . . . .	24	.....	.....	.....	.....	.....	none	.....
Boston and Lowell. . . . .	28	1,830,000	.....	1,995,249	388,108	130,881	7½	92½
Boston and Maine. . . . .	83	4,076,974	150,000	4,092,927	659,001	338,215	7	103½
Boston and Providence. . . . .	53	3,160,390	390,000	3,546,214	469,656	227,434	6	87½
Boston and Worcester. . . . .	69	4,500,000	425,000	4,945,967	758,819	331,296	7	101½
Cape Cod branch. . . . .	28	421,295	171,800	633,906	60,743	30,056	2½	45
Connecticut River. . . . .	52	1,591,100	193,500	1,801,946	229,004	72,028	5	55
Eastern. . . . .	75	2,850,000	500,000	3,120,391	488,793	241,017	7½	91½
Fall River. . . . .	42	1,050,000	none.	1,050,000	229,445	99,589	8	106½
Fitchburg. . . . .	66	3,540,000	112,305	3,623,073	574,574	232,787	6	96½
New Bedford and Taunton. . . . .	20	500,000	none.	520,475	164,230	43,950	7½	117
Norfolk County. . . . .	26	547,015	819,743	1,245,927	67,251	23,415	none	60
Old Colony. . . . .	45	1,964,070	282,300	2,293,534	322,213	101,510	none	90½
Taunton Branch. . . . .	12	250,000	none.	307,136	137,406	24,399	8	.....
Vermont and Massachusetts. . . . .	77	2,140,538	1,001,500	3,203,333	218,679	18,648	none	13½
Worcester and Nashua. . . . .	45	1,134,000	171,210	1,321,945	162,109	66,900	4½	59½
Western. . . . .	155	5,150,000	5,319,520	9,953,759	1,339,873	683,194	6½	97½
Stonington. . . . .	50	.....	467,700	.....	240,572	110,892	.....	65
Providence and Worcester. . . . .	40	1,457,500	300,000	1,731,498	253,690	139,514	6	.....
Canal. . . . .	45	922,500	500,000	1,400,000	.....	.....	4	65
Hartford and New Haven. . . . .	72	2,350,000	800,000	3,150,000	639,529	294,269	10	118½
Housatonic. . . . .	110	.....	.....	2,500,000	329,041	168,902	none	.....
Hartford, Prov. and Fishkill. . . . .	50	.....	.....	In progress	69,629	.....	none	.....
New London, Wil. and Palmer. . . . .	66	558,861	800,000	1,511,111	114,410	.....	.....	.....
New York and New Haven. . . . .	61	3,000,000	1,641,000	4,978,487	806,713	428,173	7	102
Naugatuck. . . . .	62	926,000	440,000	.....	.....	.....	8	.....
New London and New Haven. . . . .	55	750,500	650,000	1,380,610	Recently opened.	.....	none	52
Norwich and Worcester. . . . .	54	2,121,110	701,600	2,596,488	267,561	116,965	4½	58
Buffalo and New York City. . . . .	91	900,000	1,550,000	2,550,500	Recently opened.	.....	none	85
Buffalo, Corning and N. York. . . . .	132	.....	.....	In progress	.....	.....	none	65
Buffalo and State Line. . . . .	69	879,636	872,000	1,921,270	Recently opened.	.....	.....	130
Canandaigua and Niagara F. . . . .	50	.....	.....	In progress	.....	.....	.....	.....
Canandaigua and Elmira. . . . .	47	425,509	582,400	987,627	76,760	39,360	none	68
Cayuga and Susquehanna. . . . .	35	687,000	400,000	1,070,786	74,241	23,496	none	.....
Erie, (New York and Erie). . . . .	464	10,000,000	24,003,865	33,070,863	3,537,766	1,691,623	7	81½
Hudson River. . . . .	144	8,740,515	7,046,395	10,527,654	1,063,659	338,783	none	67½
Harlem. . . . .	130	4,725,250	977,463	6,102,935	681,445	324,494	5	56½
Long Island. . . . .	95	1,875,148	516,246	2,446,391	205,068	44,070	none	30½
New York Central. . . . .	504	23,085,600	10,773,823	33,859,423	.....	.....	.....	115½
Ogdensburg (Northern). . . . .	118	1,579,969	2,969,760	5,133,834	480,137	195,847	none	29
Oswego and Syracuse. . . . .	35	350,000	201,500	607,803	90,616	43,609	4	70
Plattsburg and Montreal. . . . .	23	174,042	181,000	349,775	Recently opened.	.....	none	.....
Rensselaer and Saratoga. . . . .	25	610,000	25,000	774,495	213,078	96,737	.....	.....
Rutland and Washington. . . . .	60	850,000	400,000	1,250,000	Recently opened.	.....	.....	.....
Saratoga and Washington. . . . .	41	899,800	940,000	1,832,945	173,545	135,017	none	30
Troy and Rutland. . . . .	32	237,690	100,000	329,577	Recently opened.	.....	.....	83
Troy and Boston. . . . .	39	430,936	700,000	1,043,357	Recently opened.	.....	none	.....
Watertown and Rome. . . . .	96	1,011,940	650,000	1,693,711	225,152	116,706	8	94
Camden and Amboy. . . . .	65	1,500,000	.....	4,327,492	1,388,335	478,413	10	145
Morris and Essex. . . . .	45	1,022,420	128,000	1,220,325	149,941	79,252	4	.....
New Jersey. . . . .	31	2,197,840	476,000	3,245,720	603,942	316,259	10	131
New Jersey Central. . . . .	63	986,106	1,500,000	2,379,880	260,899	124,740	3½	.....
Cumberland Valley. . . . .	56	1,184,500	13,000	1,265,143	118,617	76,890	5	.....
Erie and North East. . . . .	20	600,000	.....	750,000	Recently opened.	.....	.....	125
Harrisburgh and Lancaster. . . . .	36	830,100	718,227	1,702,523	265,327	106,320	8	.....
Philadelphia and Reading. . . . .	95	6,656,332	10,427,800	17,141,987	2,480,626	1,251,067	7	81½
Philad., Wilmington and Balt. . . . .	98	3,850,000	2,403,276	6,813,839	667,735	383,501	5	78



## Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of \$100.

NAME OF COMPANY.	Miles open.	Capital paid in.	Funded debt.	Tot. cost of road and equipm't.	Gross Earnings for last official year.	Net earnings for last official yr.	Dividend for do.	Price of shares.
Pennsylvania Central..... Penn.	250	9,768,155	5,000,000	13,600,000	1,943,827	617,625	....	95
Philadelphia and Trenton.... "	30	.....	.....	.....	.....	.....	.....	.....
Pennsylvania Coal Co..... "	47	.....	.....	.....	.....	.....	.....	102½
Baltimore and Ohio..... Md.	381	9,188,800	9,827,123	19,542,307	1,325,563	615,884	7	56½
Washington branch..... "	38	1,650,000	.....	1,650,000	348,622	216,237	8	.....
Baltimore and Susquehanna.. "	57	.....	.....	.....	413,673	152,536	.....	.....
Alexandria and Orange..... Va.	65	.....	.....	In prog.	.....	.....	.....	.....
Manassas Gap..... "	27	.....	.....	In prog.	.....	.....	.....	.....
Petersburgh..... "	64	769,000	173,867	1,163,928	227,593	72,370	7	77
Richmond and Danville..... "	73	1,372,324	200,000	In prog.	.....	.....	.....	70
Richmond and Petersburg.. "	22	685,000	.....	1,100,000	122,861	74,113	none	40
Rich., Fred. and Potomac.... "	76	1,000,000	503,006	1,531,238	254,376	113,256	7	100
South Side..... "	62	1,357,778	640,000	2,106,467	62,762	.....	.....	.....
Virginia Central..... "	107	1,400,100	446,036	In prog.	176,485	74,902	none	61
Virginia and Tennessee..... "	60	3,000,000	1,500,000	In prog.	.....	.....	none	98
Winchester and Potomac.... "	32	180,000	120,000	416,532	89,776	.....	12	.....
Wilmington and Raleigh... N. C.	161	1,338,878	1,134,698	2,965,574	510,038	153,898	6	.....
Charlotte and South Carolina. S. C.	110	.....	.....	.....	.....	.....	.....	.....
Greenville and Columbia.... "	140	1,004,231	300,000	In prog.	.....	.....	.....	.....
South Carolina..... "	242	3,858,840	3,000,000	7,002,396	1,000,717	609,711	7	125
Wilmington and Manchester. "	.....	.....	.....	In prog.	.....	.....	.....	.....
Georgia Central..... Ga.	191	3,100,000	306,187	3,378,132	945,508	508,625	8	115
Georgia..... "	211	4,000,000	1,214	.....	934,424	456,468	7½	.....
Macon and Western..... "	101	1,214,283	168,000	1,596,283	296,584	153,697	9	109
Muscogee..... "	71	.....	.....	In prog.	.....	.....	.....	.....
South Western..... "	50	586,887	150,000	743,525	129,395	71,535	8	.....
Alabama and Tennessee River Ala.	55	.....	.....	In prog.	.....	.....	.....	.....
Memphis and Charleston.... "	93	776,259	400,000	In prog.	.....	.....	.....	.....
Mobile and Ohio..... "	33	879,868	.....	In prog.	.....	.....	.....	.....
Montgomery and West Point. "	88	688,611	.....	1,330,960	173,542	76,079	8	.....
Southern..... Miss.	60	.....	.....	.....	.....	.....	.....	.....
East Tennessee and Georgia.. Tenn.	80	835,000	541,000	In prog.	.....	.....	.....	.....
Nashville and Chattanooga. "	125	2,093,814	850,000	In prog.	.....	.....	.....	.....
Covington and Lexington.... Ky.	38	1,430,150	900,000	In prog.	.....	.....	.....	62½
Frankfort and Lexington.... "	29	357,218	.....	584,902	87,421	44,250	.....	80
Louisville and Frankfort.... "	65	.....	.....	.....	.....	.....	.....	.....
Maysville and Lexington.... "	.....	.....	.....	In prog.	.....	.....	.....	.....
Cleveland and Pittsburgh.... Ohio.	100	1,239,450	1,371,000	2,963,756	194,429	123,306	6	93
Cleveland, and Erie..... "	95	.....	.....	.....	.....	.....	.....	.....
Cleveland and Columbus.... "	135	3,027,000	408,200	3,655,000	777,793	483,454	12	124
Columbus, Piqua and Indiana. "	46	.....	.....	2,000,000	.....	.....	.....	80
Columbus and Lake Erie.... "	61	.....	.....	.....	.....	.....	.....	.....
Cincinnati, Ham. and Dayton "	60	2,100,000	500,000	2,659,653	321,793	200,967	.....	106
Cincinnati and Marietta.... "	.....	.....	.....	In prog.	.....	.....	.....	72½
Dayton and Western..... "	40	310,000	550,000	925,000	.....	.....	.....	80
Dayton and Michigan..... "	20	.....	.....	In prog.	.....	.....	.....	.....
Eaton and Hamilton..... "	36	.....	.....	.....	.....	.....	.....	60
Greenville and Miami..... "	31	.....	.....	.....	.....	.....	.....	.....
Hillsboro..... "	37	.....	.....	In prog.	.....	.....	.....	.....
Little Miami..... "	84	2,370,784	.....	2,634,157	526,746	314,670	10	113
Mansfield and Sandusky.... "	.....	900,000	1,000,000	1,855,000	.....	.....	.....	.....
Mad River and Lake Erie.... "	167	2,387,200	1,767,000	4,110,148	540,518	113,401	.....	95
Ohio Central..... "	57	.....	.....	In prog.	.....	.....	.....	90
Ohio and Mississippi..... "	.....	.....	.....	.....	.....	.....	.....	87
Ohio and Pennsylvania..... "	187	1,750,700	2,450,000	.....	.....	.....	.....	.....
Ohio and Indiana..... "	.....	.....	.....	In prog.	.....	.....	.....	.....
Scioto and Hocking Valley.. "	.....	.....	.....	.....	.....	.....	.....	.....
Toledo, Norwalk and Clevel'd "	87	552,000	800,000	1,317,140	.....	.....	.....	93
Xenia and Columbus..... "	64	1,092,137	119,500	1,257,714	237,506	135,363	15	116
Evansville and Illinois.... Ind.	31	.....	.....	In prog.	.....	.....	.....	.....
Indiana Central..... "	.....	.....	.....	.....	.....	.....	.....	90
Indiana Northern..... "	131	.....	.....	.....	.....	.....	.....	115
Indianapolis and Bellefontaine "	83	.....	.....	.....	.....	.....	.....	166
Lawrenceburg and Ind..... "	90	.....	.....	In prog.	.....	.....	.....	77
Lafayette and Indianapolis.. "	62	.....	.....	.....	.....	.....	.....	82
Madison and Indianapolis.... "	88	1,650,000	750,000	2,400,000	516,414	268,075	10	78
Peru and Indianapolis..... "	40	.....	.....	In prog.	.....	.....	.....	65
Terre Haute and Indianapolis "	72	632,387	663,100	1,355,019	105,944	71,446	4	108
Rock Island and Chicago.... Ill.	.....	.....	.....	.....	.....	.....	.....	.....
Chicago and Mississippi.... "	135	2,400,000	4,000,000	4,600,000	.....	.....	.....	136
Illinois Central..... "	.....	.....	.....	.....	.....	.....	.....	.....
Galena and Chicago..... "	92	1,932,361	500,000	In prog.	473,548	286,152	.....	122
Michigan Southern..... Mich.	315	2,800,000	2,629,000	6,430,246	592,187	293,046	.....	120
Michigan Central..... "	282	4,000,000	4,067,398	8,614,198	.....	.....	8	109½
Pacific..... Mo.	38	1,000,000	none	In prog.	.....	.....	.....	.....

cent. upon its cost, though only about upon its capital. The actual cost of the Erie road has not, we presume, exceeded \$20,000,000. The balance has been sacrificed by the unfavorable circumstances under which the road has been constructed. In each of the above roads there are probably \$18,000,000 of what may be termed dead capital.

A comparison of the roads of the two countries shows a much more active internal commerce in the United States, and a much greater movement of persons, than in Great Britain. For the transportation of freight, the three great New York roads, the Central, Erie, and Hudson River, come in direct competition with the Erie Canal and Hudson River. The value of freight passing over the canal the present year will reach, at the lowest calculation, \$225,000,000. The tonnage will reach nearly 3,000,000 tons. The tolls on the canals will exceed \$3,300,000. The traffic of the Hudson River road in the summer months is confined chiefly to passengers. The proportion of freight received from the carriage of passengers, and merchandise upon the roads of the two countries, is very nearly the same.

To Americans, the cost of English roads appears to be excessive and very disproportioned to their traffic. As commercial enterprises they have not proved profitable. We presume, however, that the indirect benefits derived from them, have compensated, in some degree, for the losses suffered in construction. In this country we have been more fortunate, in keeping steadily in view, the great object in the construction of railroads—a remunerative return upon their cost. If we have not such fine works as are found in England, we have the satisfaction of knowing that they have enriched, instead of impoverishing the country; and that our entire railway investment is earning more than 7 pr. ct. net, upon the cost of our roads.

## Michigan Southern Railroad.

We publish this week the recent report of this Company, to which we invite attention. It presents a full, lucid, and favorable, but we think, not an overdrawn statement, of the affairs and prospects of the road. The route occupied by it, is one of the most important in the United States, in a business and commercial point of view.

In the hands of the present directors, the management of the Company's affairs has been characterized by extraordinary energy and capacity, and the result obtained is one which has rarely been equalled by any similar work in this country.

## Correction.

In the "Mileage of Engines of New Haven road," published in the Journal of the 3d inst., read 132, instead of "61 miles of road, operated by the New York and New Haven Railroad Company." Also, in same article, at the head of the right hand column of figures, read first nine months in 1853. Engine No. 1, in same column, ran 28,853 miles; No. 2, 19,857 miles. No. 10, in 1861, ran 17,136 miles.

We regret to be compelled to exclude a number of articles from our present issue, on account of the length of the one on the Pacific Railroad. Our readers must accept the paramount interest and importance attached to this subject, as a sufficient apology for the space it has occupied in our columns for a few weeks past.

### Report of the Directors of the Michigan Southern and Northern Indiana Railroad Companies.

The Directors of the Michigan Southern and Northern Indiana Railroad Companies, in presenting this report to the stockholders, deem it proper first to explain the connection that exists between the two companies.

It will be seen, by reference to the accompanying map, that the combined roads extend from Lake Erie through portions of the States of Ohio, Michigan, Indiana and Illinois, to the city of Chicago, forming a continuous line. The part of the road which is in the State of Michigan has been built by the Michigan Southern Company, under a charter granted in that State; and the portion of the road extending from Toledo, directly west through Ohio and Indiana, to Chicago in the State of Illinois, has been and will be built under the charter of the Northern Indiana Company, by authority from said States respectively.

The business to be provided for is in its nature so intimately blended, that it is a necessity, in order to its convenient management, to regard the lines as essentially one; and it would be a convenience to consolidate the companies, and their stock. But authority to do this has not yet been obtained.

A contract has, however, been made between them, having for its object the most efficient and convenient transaction of business. The contract provides, among other things, that the general management of the business in the operating department shall be conducted by the same executive officers and agents. This was necessary in order to secure the most systematic and efficient transaction of the business required to meet the wants of the public, and promote the interests of the stockholders.

By the contract referred to, each company shares in the net earnings of the entire line, according to its respective capital invested in the construction of the road. While, therefore, the companies have each their own capital stock and organization, and are distinct corporations in every respect, co-operating together only by agreement, to simplify the transaction of business and promote their mutual interest, yet, by virtue of this agreement, the different roads are managed and operated as one line. The shares in each company are entitled to the same rate of dividend of the net earnings of both companies: a practical consolidation of the business of the road is thus established.

These preliminary remarks will explain the propriety of treating of the business of the two companies in a joint report. Indeed, their history, interests and business are so closely connected, that it is not convenient to discuss them separately, and this method is regarded as best adapted to give the stockholders of the respective companies an intelligent view of their history and condition.

In September, 1849, soon after the present organization of the Michigan Southern Company, a statement was submitted to the stockholders by the Board of Directors, exhibiting the condition of the road, and the finances of the Company, and soliciting a new subscription of a quarter of a million of dollars, to provide means for extending the road west from Hillsdale. A portion of the stock was subscribed, and in the spring of 1850, the line from Hillsdale to Coldwater, a distance of 22 miles, was put under contract. The road then in operation from Monroe to Hillsdale, a distance of 69 miles, was that originally constructed by the State of Michigan, and had a wooden rail, covered by a flat iron bar. The Tecumseh Branch, 9 miles in length, was also owned by the Company. The Company had leased the Erie and Kalamazoo Railroad, extending from Adrian to Toledo, in length 33 miles; making a total of 111 miles then operated by the Company, all of flat bar construction. In the original grading of these roads, for the most part, the crossing of the valleys was by bridges of timber, the greater portion of which were in a decayed state, and the roads were, gen-

erally, in a bad condition. The whole have since been re-laid with heavy rail, and the valleys mostly filled with permanent embankments, with new bridges and culverts for the streams and water courses. Very little Station accommodation was made in the original construction. It was therefore necessary to incur heavy expenses to put this portion of the line in good order.

In the summer of 1850, the line was put under contract from Coldwater to Sturgis, about twenty-three miles. This made the line of contract for new work, forty-five miles, from Hillsdale to Sturgis: of this the road was opened for use to Jonesville, (5 miles,) in September; to Coldwater, (22 miles,) in December; and to Sturgis, (45 miles,) in March, 1851. No more work was put under contract during the year 1850.

Some delay was experienced in settling the location of the line west of Sturgis, and contracts were not made until May, 1851, for the balance of the road in Michigan.

During the winter and spring of 1851, the Indiana road was put under contract.

The Michigan road was opened to White Pigeon the latter part of July, 1851. The Northern Indiana road was opened in successive stages, during the autumn of 1851, to South Bend; and on the 9th of January, 1852, to La Porte. In February, 1852, the road was opened from Michigan City to Ainsworth's Station, in Illinois, and to Chicago in March following. The connection between La Porte and Michigan City was by plank road, 13 miles in length.

On the 22d of May, 1852, the entire line was opened, and a passenger train went through to Chicago.

A large portion of the track was laid in the very severe winter of 1851 and 1852, and consequently was in poor order, and had to be run with care. The work of adjusting and ballasting the track, with the road in operation, involved a heavy expense. This work, as well as the improvement of the old portion of the road, would have been much less expensive, if, during its progress, the ordinary traffic of the road could have been suspended; but, under the circumstances, this was inadmissible.

In the space of about twenty months, embracing two winters, (one of these peculiarly severe for such work,) and one summer, the Companies constructed about (160) one hundred and sixty miles of new road, and re-laid, and nearly re-built, fifty (50) miles of old road. The construction of a line of railroad of this length, in so short a time, is believed to be without precedent.

Many of the stockholders will recollect the difficulty of procuring subscriptions to the stock: the Directors had strong confidence in the success of the undertaking, but the general feeling of capitalists was distrust of western investments, and very few were disposed to hazard any considerable amount in the undertaking. In addition to this, the financial crisis of 1851 came at a time most embarrassing to the affairs of the companies. During the whole progress of the work they encountered an active hostility which was directed against their credit, assailing their securities, discrediting their finances, and, as far as possible, impairing the confidence of those engaged in the work. It is sufficient at this time to say, that all obstacles were surmounted, active progress maintained, and the work brought into use with unprecedented rapidity.

For the most part, the way stations have been well provided with buildings for the accommodation of passengers and freight, especially on the new portion of the line. On the Michigan Southern road, at Adrian, and on the Northern Indiana road, at La Porte, there are substantial brick shops, roofed with tin, and filled with the most improved machinery driven by stationary steam engines, for repairs of engines and cars.

At Toledo and Chicago there is yet a good deal to be done, to provide the accommodations required for the increasing business of the road. At Chicago, lands have been procured to establish a station in a more central position in the city; and

the buildings will soon be commenced. At Toledo, the Northern Indiana Company have commenced preparing land, docks, warehouses and buildings, for a very commodious station, adapted to the large and increasing business of the road at its eastern terminus, and for the accommodation of connecting roads. At Monroe pier, large expenditures have been incurred, and convenient accommodations provided.

Very active operations have been going on since the early part of this season, in ballasting the road, in filling embankments where temporary bridges had been put in, and widening those that had settled. Owing to the rapid construction, the banks had not time to become well settled until after the road was opened for use. At this time nearly all the old bridges over the water-courses have been superseded by new ones, and the remainder of the valleys filled with substantial embankments. The road bed and track are now in good order, though further work in ballasting will be required. The trains now run from Chicago, through, to Monroe and Toledo, in eight and a half (8½) hours, with great regularity; and this time may be reduced, at an early day, to eight (8) hours.

#### LENGTH OF ROADS.

The length of roads of the companies is as follows:

#### Maine Line.

Main line of the Michigan Southern Road.....	133 Miles.
Main line of the Northern Indiana Road.....	118 "
	246 Miles.

#### Branches.

Tecumseh Branch.....	10 Miles.
Constantine Branch.....	4 "
Erie and Kalamazoo.....	33 "
Michigan City Branch.....	14 "
Goshen Branch.....	10 "
	71 Miles.

Total miles..... 317

#### STOCK OF ROOLING MACHINERY.

There are now on the road, as follows:

#### Locomotive Engines.

6 of 16 tons.....	4½	feet Drivers.
12 " 18 ".....	4 to 5	" "
6 " 20 ".....	6	" "
5 " 21 ".....	4½	" "
6 " 22 ".....	5	" "
6 " 25 ".....	6	" "
3 " 25 ".....	4½	" "

Total, 44

In addition to the above, there are eight (8) engines of the old class, mostly used for ballasting, and hauling wood and lumber.

Contracts have been made for four more engines, of twenty-five tons each, to be on the road during the month of September next.

#### CARS.

The companies now own passenger and freight cars as follows:

#### Passenger Cars.

38 first class passenger cars.
8 second " "
13 emigrant " "
12 baggage cars.
5 post-office cars.

Total, 76 cars, in passenger and post-office department.

#### Freight Cars.

40 cattle cars, open racks.
99 platform cars.
303 house "

Total, 442

Each car, both in the freight and passenger departments, has eight wheels.

In addition to the above, there are contracted



for, four first class passenger cars—also twelve emigrant cars, and one hundred and twenty-five house freight cars, which are beginning to be delivered, and are expected to be all on the road by the middle of September next. When these are added to the present stock, there will be in the passenger department, ninety-eight (98) cars, and in the freight department, five hundred and sixty-seven (567) cars.

The prospect now is, that the stock of engines and cars will hardly be sufficient for the business of the ensuing autumn. The country along the line of road is fast improving in the extent of land brought under cultivation, and the population is increasing rapidly. Probably there is less than one-third of that part of the country which constitutes the local districts for the business of the road, now under cultivation, or occupied as farms. It is therefore obvious that a large resource for local trade is yet to be developed, by the progressive settlement of lands now occupied.

#### BUSINESS OF THE YEAR, ENDING JUNE 30th, 1853.

The amount of business done by the companies, for the year, appears from the Treasurer's Report hereto annexed, and is as follows:

The gross earnings of the companies, from their first year operations, have been.....	\$1,200,922 11
The operating expenses, (including taxes and rent of Erie and Kalamazoo railroad,) have been.....	579,635 30

Leaving nett earnings.....	\$621,286 81
----------------------------	--------------

From this amount are to be deducted—

Interest account.....	\$212,265 97
-----------------------	--------------

Extraordinary expenses incurred in forming the Boat connections upon the Lakes, during 1852.....	34,357 86
	246,623 88

Leaving, as the actual nett profit for the year.....	\$874,662 98
--	--------------

This is equal to 14 per cent. upon the average amount of capital stock, during the year.

The Treasurer's Report also exhibits the state of the Income account, as follows:

July 1, 1852. Balance at credit of this account, at this date.....	\$49,614 70
Gross earnings for the year, (as above stated,).....	1,200,922 11
	\$1,250,536 81

Less, operating and expense account.....	\$579,635 30
--	--------------

Less, interest account.....	212,265 97
-----------------------------	------------

Less, extraordinary expenses for Boat connection.....	34,357 86
	826,259 13

Jan'y, 1853. Semi-annual dividend of 5 per cent. upon the then amount of the capital stock of the companies.....	124,970 58
--	------------

July, " Balance at credit of this account.....	\$299,807 15
--	--------------

" " Semi-annual dividend of 7 per cent. upon the capital stock, at this date, (\$2,800,000,) has been declared, amounting to.....	196,000 00
---	------------

Leaving at credit of account, .....	\$108,807 15
-------------------------------------	--------------

#### JACKSON BRANCH.

The charter incorporating the Michigan Southern Company, makes it the duty of the Company to extend the Tecumseh branch to the village of Jackson, on the line of the Michigan Central Road. This work the Company deferred until the main line was through. Shortly after this, and during the summer and autumn of 1852, they caused surveys to be made, with a view to establish the proper line, and have recently put the work under contract. The work of relaying the Tecumseh branch, and its extension to Jackson, is now commenced. The length of this branch, from the main line to Jackson, is about forty-one (41) miles.

The road, ballasted and fenced, with full stock of cars, engines and stations, in complete order for use, it is estimated, will cost about \$800,000, equal to about \$19,000 per mile. To provide the necessary means for the construction of this branch, new stock has been issued and distributed among the stockholders to the amount of \$350,000, and an issue of bonds of the Company to the amount of \$500,000 has been authorized, to be secured by a mortgage upon this branch road, to bear interest at seven per cent., and payable in 1865.

It is probable this road will be eventually extended northerly from Jackson, through Lansing, (the seat of government for the State of Michigan,) to the northern part of the State, and it will no doubt be an important feeder to the main line.

There is also a road now being constructed by the St. Joseph Valley Railroad Company, from the Michigan Southern Railroad, at Constantine, to the village of Three Rivers, (a distance of about eight (8) miles,) which probably will be brought into use in October next. From Three Rivers, this road will doubtless be extended northwards at no very distant day; it will ultimately reach some point on the eastern shore of Lake Michigan, and, together with the road through Jackson, will greatly increase the business of the main line of the Michigan Southern Road.

#### DIRECT LINE FROM TOLEDO TO GOSHEN.

In looking forward to such measures as might ultimately be necessary to secure the best line of railroad between the head of navigation on Lake Erie and Chicago, the Directors of the Northern Indiana Company early obtained corporate rights to make a direct line of railroad from Toledo, in Ohio, connecting with their line in Indiana, and with these, to consolidate the line in Ohio and Indiana under one company. Extensive surveys were made, last season, to determine the best location between Toledo and Goshen. The result has been the establishment of a highly favorable line, varying in length, between the two points, not over two per cent. from an air (or direct) line. The bend in the line is all southwards, making a considerable departure from the present road, and thereby less affecting its local trade, while the best "through" line is secured. The total length of the line from Toledo to Goshen is one hundred and twenty-two (122) miles. There are but four curves on the whole line. There is one straight line seventy (70) miles in length. The maximum grade, going west, is twenty feet to the mile and going east ten feet to the mile. Estimated cost, (including stations and rolling stock,) two and a half millions of dollars, or about twenty thousand dollars per mile.

To provide the means necessary for the construction of this new line, an issue of stock to the amount of \$1,050,000 has been made, and distributed among the existing Stockholders; and an issue of the bonds of the Company has been authorized, to the amount of \$1,500,000; the bonds to be secured by a mortgage of the new road, to bear interest at seven per cent., and to be payable in 1868.

The Ohio and Indiana Companies have been consolidated under the name of the Northern Indiana Railroad Company.

Seventy miles of the road from Toledo, westward, has been put under contract, and the work

is now commenced. The remainder is advertised for contract, and proposals will be received on the first of September next. The rails are now arriving, and will go forward so as to commence laying the superstructure by the first of October. It is the intention of the Board to have the direct line opened by the close of next year. This line passes through a fine district of country, and will be equal to any, of the same extent, in supplying freight and passenger business for the road. It is very well settled, for a new country, and the opening of the road will cause its improvement to increase rapidly.

From what has been said, it will be seen the direct line will be highly favorable as to grades and alignment, and may be run with as high speed as any other road. It will reduce the distance from Chicago to Toledo to two hundred and thirty-one (231) miles, and from the highly favorable character of the line, it may be run in about six hours.

At a point 70 miles west from Toledo, this line is intersected by the Logansport and Northern Indiana Railroad, now in progress of construction. This road is about 90 miles in length, and gives the Northern Indiana Road a connection with the Valley of the Wabash at Logansport. Surveys are now being made to extend the line southwest from Logansport, to form a connection with the Terre Haute and Alton Road at Paris, in Illinois. This will make the most favorable route to connect the navigation of Lake Erie with the Mississippi at Alton and St. Louis, and cannot fail to accumulate a very large business on the eastern section (of 70 miles) of the Northern Indiana Road.

#### CONNECTIONS WITH OTHER ROADS.

Favorable arrangements have been made at Toledo for connection with the Cleveland and Toledo Road. At Cleveland there is a connection, by the road along the shore of the lake, with Erie, Dunkirk and Buffalo. By the New York and Erie Road, the Buffalo and New York City Road, and the New York Central Road, there are now continuous railroad connections over your line between Chicago and New York and Boston. The line from Cleveland to New York, via Pittsburgh, it is supposed, will be complete in a few months. The Cleveland and Mahoning Road is now in progress of construction from Cleveland, to intersect the Pennsylvania Central Road at or east of Blairsville. This road is of the same gauge as the Michigan Southern and Northern Indiana Roads; and, when it is completed, there will be a continuous line from Chicago to New York, to Philadelphia, and to Baltimore, of uniform gauge. The Erie and Sunbury Road, with its connections, will make another route by which your road will have connection with New York and Philadelphia.

The distances, by the Northern Indiana Road, from Chicago to New York, by several railroad routes now open, and that will be open in a short time, are as follows:

By way of Buffalo and Albany *.....	959 miles.
By way of Buffalo and New York City and New York and Erie †.....	941 miles.
By way of Dunkirk and New York and Erie ‡.....	936 "

* From Chicago to Toledo.....	231	} 334 miles.
" Toledo to Cleveland.....	103	
" Cleveland to Buffalo.....	183	
" Buffalo to Albany.....	298	
" Albany to New York.....	144	"

Total (Chicago to New York) as above 959 miles.

† From Chicago to Buffalo (as above) 517 miles.	
" Buffalo to Hornellsville.....	91 "
" Hornellsville to New York.....	333 "

Total, (as above)..... 941 miles.

‡ From Chicago to Cleveland, (as above).....	334 miles.
" Cleveland to Dunkirk.....	142 "
" Dunkirk to New York.....	460 "

Total, (as above)..... 936 miles.

By way of Mahoning line from Cleveland;.....869 "  
 By way of Erie and Sunbury, (a line that may be expected in a few years,) uncertain; but will probably be not far from.....880 "  
 The distance by way of the Michigan Central and Canada route, when completed, will be §.....961 miles.  
 The detention by the Detroit ferry will be equivalent to (at least).....20 "  
 The suspension bridge over the Niagara will cause detention, as, most probably, the trains will require to be broken up in passing it, and can hardly be less, reckoning by time, than equivalent to (probably doubly this)...10 "

991 miles.

From the above it appears that the Northern Indiana route to New York or Boston, via Albany, is 32 miles shorter than the route by the Michigan Central and Canada Roads. The allowance for the detention by the ferry at Detroit, which is equivalent to adding so much of the length of the route, will be considered moderate by railroad men. It is not probable that a suspension bridge of 800 or 900 feet span will have the stability necessary to give the confidence to travellers that will permit trains to pass over unbroken, and a detention of twenty minutes, to break up a train, get it over the bridge and make it up again, cannot be regarded as extravagant, and will most probably be found too low an estimate for the time required. It is obvious, too, that some allowance should be made for the fact, that this route lies, for a portion of the way, through the territory of a foreign government, and must, therefore, be exposed to delays and detentions, resulting from police and custom house regulations. It is therefore believed to be a moderate estimate to put the detention by the Detroit ferry and the Niagara suspension bridge as, in time, making thirty miles in the distance of travelling.

The Northern Indiana Road, from Chicago to Toledo, will be decidedly superior to the Michigan Central Road in grades and alignment, and may be run with higher speed. The road along the south shore of Lake Erie cannot be considered as inferior to the Canada road in the same respects; it will be much less liable to incumbrance, in the winter, from heavy drifting snows, and will have no ferry to be embarrassed by floating ice, as may be expected in the Detroit River. Without regard to other considerations, it must appear from the above that the Northern Indiana Road will have no competitor of equal facilities in communication between Chicago and New York, or Boston, via Albany; but that, by way of Buffalo and Albany and the Hudson River Road, it will be 32 miles shorter than by the Michigan Central and Canada route. On the same principle, by the New York and Erie, via Buffalo and New York City Roads, the Northern Indiana line will be 50 miles—via Dunkirk and New York and Erie, 55 miles—and via Mahoning and Central Pennsylvania Roads, 122 miles, shorter distance to New

† From Chicago to Cleveland (as above).....334 miles.  
 " Cleveland to Blairsville.....172 "  
 " Blairsville to Dauphin.....187 "  
 " Dauphin to New York (by way of Allentown and Easton)....176 "

Total, (as above).....869 miles.

§ From Chicago to Detroit.....283 "  
 " Detroit to Niagara, via Canada.....228 "  
 " Niagara to Albany.....306 "  
 " Albany to New York.....144 "

Total, Chicago to New York, (as above), 961 miles.

York than the route by the Michigan Central and Canada Roads.

The superiority of the Northern Indiana Railroad route over the last named, for connection with Philadelphia, Baltimore and Washington, leaves no room for competition. The distance from Chicago to Philadelphia will be (by Northern Indiana, Cleveland and Central Pennsylvania roads) over 200 miles shorter than by the Canada and Michigan Central route. A glance at the map shows that the route from Chicago, via Toledo and Cleveland, is very direct to Philadelphia and New York. Aside, however, from the question of distance and time of traveling, there are other considerations of great importance that will largely control the course of travel. Between Chicago and Buffalo, the Northern Indiana and Lake Shore lines will be intersected by roads leading southerly and south-easterly, through Indiana, Ohio and Pennsylvania, touching the Ohio River at certain points, and opening communication with Kentucky, Virginia and Maryland, thereby collecting a large traffic, independent of that which reaches the seaboard. Buffalo, the eastern focus of lake commerce, will be reached by the Northern Indiana route without the uncertainty and embarrassments attending ferries over large and rapid rivers, encumbered in the winter with islands of floating ice. In order to reach Buffalo by the Canada road, a side route of 25 miles must be encountered, with all its indirectness, additional distance, and consequent delay, or by a branch from the Canada road, that will be more direct, but must encounter a difficult ferry across the Niagara river: the interest of Buffalo, therefore, will be with the Northern Indiana road.

With the above remarks, it is left for the stockholders to examine the map of the country, and judge if there can be any reasonable grounds to doubt that their roads will command a largely remunerating business. The Directors have heretofore believed, and see nothing to change that belief, that the great western thoroughfare will be along the south shore of Lake Erie, and thence by the Northern Indiana Road to Chicago. Into this route will be gathered, from the numerous railroads intersecting from the south, an immense amount of travel. At Chicago it connects with the Chicago and Rock Island road, which, with the Mississippi and Missouri roads, will form an extension of this great western thoroughfare from the eastern and south-eastern Atlantic seaboard to Council Bluffs, on the banks of the Missouri; and thence, ultimately, it will be extended to the Pacific. No doubt there will be other routes by railroads from the east to the west, but they must be inland, and possess inferior commercial advantages, for the reason that the heavy traffic of the country will seek the great chain of lakes, as the most economical means of transit. To illustrate this:—a barrel of flour may be taken by lake navigation from Chicago to Buffalo for 25 cents, and thence to New York for 50 cents, (which will ultimately be reduced,) a total of 75 cents from Chicago to New York. A similar relative result would be obtained from Toledo to New York.

No railroad transportation can successfully compete with this; and therefore it is, that railroads in the Western States concentrate to the most accessible lake ports. Almost any railroad map will show the concentration to Milwaukee, Chicago, Monroe, Toledo, Sandusky, Cleveland, Buffalo, and other similar lake ports, and especially to the more important ports of Chicago, Toledo, Cleveland and Buffalo. The conclusion is therefore irresistible, that the road which passes through these lake ports, must have an eminent superiority as a great commercial thoroughfare.

A railroad line starting from Buffalo, and following westward along the south shore of Lake Erie, to its head, at Toledo, and then in a direct course, by the roads of the Michigan Southern and Northern Indiana Companies, across the Isthmus of Michigan to Chicago; thence west, to the Mississippi, at Rock Island, and the Council Bluffs on the Missouri, and eventually to the Pacific,

must constitute a channel of trade and travel of unparalleled importance.

Chicago, the western terminus of your roads, is the centre of a large business. The traffic of a large country, independent of the great line west, concentrates there by several railroads, from the north, north-west and south; namely: The Chicago and Mississippi from Alton; the Chicago Branch of the Illinois Central; the Galena; the St. Charles and Mississippi; the Fond du Lac and the Milwaukee Lake Shore road, in addition to those before mentioned. From and to this point an extensive travel will move to and from the east, on the Northern Indiana Road.

To improve the Companies' portion of this great thoroughfare, the new line between Toledo and Goshen has been commenced, and the Board feel confident that this is the true interest of the Companies. The work will be constructed by the Northern Indiana Company, as consolidated.

The line will be constructed with a single track, with bridges and culverts to provide for a double track, which no doubt will be required very soon, and most probably must be commenced immediately after the opening of the new line for business. The Board are fully impressed with the importance of pursuing the most active measures, to provide for the increasing traffic that will seek this channel of communication, and will not hesitate to make further improvements in their line, and a double track, as soon as the growing business of the road may render it expedient.

The litigation with the Michigan Central Railroad Company has not yet been brought to a close. The case is pending in the Supreme Court of the United States, and will probably be decided at the next term of that court at Washington. The Board are fully satisfied the law is with the Northern Indiana Company, and have no reason to doubt that the rights of the Company will be vindicated by a decision in their favor.

The business of the road, for the first year of its operation, ending June 30th, 1853, has exceeded the expectations of the Board. The report of the Treasurer is hereto appended, and exhibits the financial condition of the Company. The Board have every reason to believe the business of the current year will be considerably greater than that of the last. The connections eastward, last winter, were imperfect. The roads on the lake shore line were not completely opened until late in February; and being newly opened for business, at the most unfavorable season of the year, were in bad condition; and being also very inadequately stocked with cars and engines, the small amount of business offered was very much embarrassed. During the present season, these roads are being ballasted, and the machinery increased, so that, by the close of navigation, they will no doubt be fully prepared to conduct with promptness all the trade in passengers and freight that may be offered. Thus far, the summer receipts on your roads are largely in advance of the same during the corresponding period of last year. The increasing trade, and increasing facilities, it is believed, will advance the gross receipts of the current year, at least thirty per cent. over those of last year. By order of the Boards of Directors. JOHN B. JERVIS, President.

July 30, 1853.

## TREASURERS REPORT

To the Directors of the Michigan Southern and Northern Indiana Railroad Companies.

I submit, herewith, sundry statements, showing the financial condition of the Companies at the close of the year ending 30th June last.

The statement marked "A," shows the standing of the Companies in general account.

It will be seen, from this account, that the total expenditure for construction and equipment of the Michigan Southern, Northern Indiana, and Erie and Kalamazoo Railroads—317 miles in all—has been \$6,446,854 66; being a little over \$20,000 per mile.

The Companies have also invested \$441,940 14, for steamboats to make the necessary connections



upon Lake Erie. Two of these steamboats, the Southern Michigan and the Northern Indiana, are under charter, for the present season, to the New York and Erie Railroad Company, for the sum of \$75,000. The other boats are run by and at the expense of these Companies.

The account also shows iron rails on hand, provided for the Jackson Branch, to the value of \$281,023 27, and stocks (principally stocks of these Companies, and of the Chicago and Rock Island Railroad Company) to the amount of \$121,577 31.

The statement marked "B," shows the gross earnings of the Companies for the year ending 30th June last, and the amounts paid, during the same time, for operating expenses and interest, including taxes, and rent of the Erie and Kalamazoo Road.

The statement marked "C," exhibits the condition of the income account.

Respectfully submitted,

EDWIN C. LITCHFIELD, *Treas'r.*

Office of the Michigan Southern and Northern Indiana Railroad Companies, New York, July, 1853.

A.

The Michigan Southern and Northern Indiana Railroad Co's in General Account.

Debtor.

Michigan Southern R. Co.:	
Construction acc't.	\$3,237,494 08
Northern Indiana R. Co.:	
Construction acc't.	2,929,316 74
Erie and Kalamazoo R. R.:	
Construction acc't.	280,043 84
Steamboats.....	\$6,446,854 66
Iron rails on hand for the Jackson Branch.....	441,940 14
Wood and materials on hand..	281,023 27
	106,798 08
	387,821 35
Bills and sums receivable.....	26,393 19
Stocks on hand, (principally of the Chicago and Rock Island, and the Michigan S. and N. Indiana R. R's.).....	121,577 31
Cash in banks....	109,485 28
Cash in hands of superintendent and agents....	210,740 13
	468,195 91
	\$7,744,812 06
	Creditor.

Michigan Southern R. Co.:	
Capital stock.....	\$1,400,000 00
Debt to State of Michigan, payable \$50,000 per annum, int. at 6 per cent.....	125,000 00
8 per cent. bonds due this day...	28,564 00
Mortgage bonds, 7 per cent., due 1860.....	1,000,000 00
7 per cent. bonds, due 1863.....	288,000 00
8 per cent. income bonds, due 1857	500,000 00
Bills payable.....	543,914 00
	\$3,855,478 00
Northern Indiana R. Co.:	
Capital stock.....	\$1,400,000 00
Mortgage bonds, 7 per cent., due	

1861.....	1,000,000 00
7 per cent. bonds, due 1863.....	500,000 00
Bills payable.....	389,481 22
	3,289,481 22

Erie and Kalamazoo R. R. Co. mortgage bonds, 7 per cent.....	300,000 00
Balance of income account, this day	299,307 15
Dividends due, uncalled for.....	545 69
	\$7,744,812 06

New York, July 1st, 1853.

B.

Table of Earnings of the Michigan Southern and Northern Indiana Railroads, for the year ending 30th June, 1853.

Months.	Passengers.	Freight.	Mails and Miscellaneous.	Totals.
1852.				
July.....	\$54,303	\$23,163	\$ 42	\$ 77,515
August....	63,403	28,063	126	91,598
September.	68,317	46,972		115,289
October...	79,180	52,051		131,232
November..	41,573	56,805	3,704	102,083
December..	30,444	26,269		56,714
1853.				
January...	30,525	16,159		46,685
February..	39,237	16,137		55,374
March.....	63,460	20,168		83,629
April.....	74,800	28,061	6,017	108,879
May.....	83,032	36,167	25,610	144,809
June.....	93,045	34,470	17,915	145,430
Mails.....			42,183	42,183
Totals..	\$720,825	\$384,496	\$95,600	\$1,200,922

Gross earnings for the year, as above ..	\$1,200,922
Operating expenses, including taxes and rent of the Erie and Kalamazoo R. R. ....	\$579,635
Interest.....	212,265
Extraordinary expenses incurred, in forming the Boat connections upon the Lakes, in 1852.....	34,357
	\$826,259

Nett profits for the year.....\$374,662

C.

Income Account, Michigan Southern and Northern Indiana Railroad Companies.

1853.	
Jan'y 1. To dividend declared this date, 5 per cent.....	\$124,970 53
July 1. To operating and expense account, 12 months ....	\$579,635 30
" " To interest....	212,265 97
" " To extraordinary expenses on the Lakes	34,357 86
Balance.....	826,259 13
	299,307 15
	\$1,250,536 81

1853.	
July 1. To dividend declared, payable July 5, of 7 per cent.....	196,000 00
Balance.....	103,705 15
	\$299,307 15

Creditor.

1852.	
July 1. By balance this account, this date.....	\$ 49,614 70
By earnings, from July 1, 1852, to July 1, 1853, as per statement.....	1,200,922 11
	\$1,250,536 81

1853.

July 1. By balance.....	\$299,307 15
	\$299,307 15

1853.

July. By balance income ac-	
-----------------------------	--

count, after payment

July dividend.....\$103,807 15

Office of the Michigan Southern and Northern Indiana Railroad Companies, Nov. 7, 1853.

The numerous delays attending the issuing of the preceding report, enables the Directors at this time to give a statement of the earnings of these roads, for the last four months of the present year 1852; it is as follows:

	1852.	1853.
Earnings for July.....	\$81,030 70*	\$116,263 02
Do. August..	95,108 67*	154,063 85
Do. Sept....	118,805 25*	198,887 46
Do. Oct.....	134,747 48*	229,804 02
	\$429,692 19	\$689,518 35
		429,692 19

Increase, four months, (over sixty per cent.).....\$259,826 16

E. C. LITCHFIELD, *Treasurer.*

Hempfield Railroad.

The following is an abstract of the annual report recently issued by the above company:

Receipts, from stockholders, corporate and individual, in payment of installments..	\$199,822 00
Disbursements, in construction, for land damages, salaries, &c..	\$149,646 02
Interest paid on stock....	465 65
	\$150,111 67

Balance on hand.....	\$49,710 33
Estimated cost of the road with the rolling stock, &c.....	\$2,986,778
Stock subscribed.....	1,945,250

Deficiency.....\$1,045,528

The report proceeded to state the means of the Company to supply this deficiency; and described the financial condition of the Company as prosperous and healthy. The Company is entirely out of debt; it has issued no bonds; and has made, and will make no sacrifices in negotiating the securities in its hands. The resources of the Company, in stock, bonds, &c., now in hand and available, amount to \$1,795,138 43.

The Company has issued a notice calling for a monthly instalment of ten per cent. upon all the stock, which has been promptly and punctually met. Arrangements have been made, by the Finance Committee of the City of Philadelphia, to make to the Company, monthly, a payment of \$50,000 upon its stock.

Along the entire route, from Greensburg to Wheeling, all the heavy and most of the light jobs are under contract, and in a fair state of advancement.

Between Wheeling and Washington every section is under contract, with stipulation that they shall all be ready for the opening of the road between these points at the close of the coming year, at or about which time the promised completion of the Chartiers Valley Road will connect the Hempfield Road immediately at Pittsburgh, with the Pennsylvania Central Road. This part of the road is in a great state of forwardness, and is pressed with all possible vigor. There are 1,500 men now working upon the road.

On the Eastern part of the road, the lettings have been principally confined to the heavy jobs, all of which have been commenced and are vigorously urged. If completed within the time fixed by the contracts, this portion will be ready for the superstructure early in the summer of '55. The progress of the entire work equals expectation and maintains the original calculation as to the period of completion.

\*The apparent discrepancy between the amounts here stated and those appearing on table B., is accounted for by the fact, that in this table the monthly proportion of the earnings for carrying the mail is added to each month separately, whilst in table B. the whole year's earnings from that source is added in one sum at the bottom.

## North Carolina.

**North Carolina Railroad.**—We learn (says the Raleigh Standard, of Saturday last) that the iron has been laid down upon this road for twelve miles this side of Goldsborough, and that the grading from that place to this is expected to be completed by Christmas. The distance from Goldsborough to the Neuse is twenty-two miles, and an engine, it is expected, will be put on when the iron is laid to the river. The distance from the river to this point is about twenty-six miles. The Company will take charge of the road to the Neuse, or will be entitled to do so, after the 1st January.

We learn that the iron for this, the 1st Division, which extends from Goldsborough to about six miles above Raleigh, is of the heavy T pattern, and looks as if it would do excellent service.

Gov. Morehead, the President of the Company, passed through this place on Wednesday last, on his way to Beaufort. We understand he has recently purchased the iron for the 2d Division, which extends from the point mentioned, above Raleigh, to the Guilford line. We do not know the price he is to pay for the iron.

It is confidently expected that the road will be completed from Goldsborough to this place by May or June next.

We learn that the grading of the North Carolina Road is expected to be completed to Hillsborough by the 1st of January next.

**Wilmington and Manchester Railroad.**—We understand a train crossed Eagle's Island yesterday, and that the passenger and freight trains will run regularly to that point on and after Monday next.—This will reduce the time in this line about three-quarters of an hour. The staging is now reduced to fourteen miles, and within ten days a further reduction of five miles will be made. The gap between the two ends of the road is now only nine miles, which the Company hope to finish—except the bridge—by the close of the year.

**Raleigh and Gaston Road.**—The Report of the President and Directors exhibited a prosperous and satisfactory condition of the Company's affairs. We learn that the receipts for the fiscal year, from freight, passengers and mail service amounted to about \$120,000; and the expenses for the same period, exclusive of construction account, about \$60,000. A dividend of 3 per cent. has been declared by the Directors, and \$2,500 appropriated to the sinking fund.

The following gentlemen constitute the Board of Directors for the ensuing year: George W. Mordecai, Thomas Miller, N. T. Green, and L. O'B. Branch on the part of the stockholders; and John G. King, Dr. William J. Hawkins, and Gaston H. Wilder on the part of the State. Mr. Branch was unanimously re-elected President of the Company, the affairs of which he has managed during the past year with such signal ability and success.—*Ral. Star.*

## Iron Rails via Quebec.

The large quantity of Iron Rails for our Western roads, imported via the St. Lawrence, (some 80,000 tons per annum,) has induced several houses in Quebec to give their almost exclusive attention to its transshipment at that point to the ports on the Upper Lakes, to which it may be destined. The attention of those Western roads which are in the habit of receiving their iron by that route, is invited to the Card of Messrs. John Anderson & Co., of Quebec, in another column. They are very largely engaged in this trade, and we understand possess ample facilities for giving it the utmost despatch. Our railroad companies will understand the advantage of having competent parties on the spot to attend to their affairs.

## Machinists' Tools.

## A SUPERIOR CLASS.

DESIGNED particularly for Railroad work, manufactured by J. B. TING & CO., (late ALDRICH, TING & CO.) Lowell, Mass.

## P. J. Tournadre,

Chief Engineer Vicksburg, Shreveport and Texas R.R.,  
Vicksburg, Miss.

## To Locomotive Engine Builders and Engineers.

THE Proprietors offer for rent for a term of years, with immediate possession, the splendid property, known as the BELLEVILLE IRON WORKS, situated on the Mississippi, directly opposite the City of New Orleans, and within 800 feet of the River, with which it is connected by fine wharves and landings.

The buildings are of brick, with slated roofs, and were erected in 1848 at a very heavy expense; are of a most substantial and durable character and admirably fitted for a Foundry and Machine Shops, or almost any mechanical business. They now contain a new and powerful Engine and Boiler and sufficient machinery, say, planing machines—lathes—boring machines, blacksmith's tools, &c., &c., to employ 100 mechanics, and could be put in working order in a few days. The Buildings cover a lot 300 feet square and are amply large to receive the necessary machinery for the use of 800 to 1000 workmen.

The terminus and depot of the New Orleans, Opelousas and Great Western Railroad is situated about 300 yards from the above property, which could be availed of to great advantage for the manufacture of Locomotives and Railroad work, generally as well as Steam Engines, Sugar Mills, and other descriptions of Machinery.

There are no Shops in New Orleans for the manufacture of Railroad Machinery, and as the Railroad Companies now organized in that city contemplate the construction of over 1000 miles of road,—a large part of which is already under contract,—the property now offered for lease offers a most eligible opportunity for parties desiring to contract to furnish the Engines and Machinery, for those roads. Responsible contractors with their works on the spot would have an advantage over Northern Workshops in contracting for the Work of the Railroads terminating in New Orleans.

The Establishment and prospect of remunerating work to be secured immediately are worthy the attention of manufacturers and Engineers generally.

Applications from responsible parties will be promptly attended to, and to satisfactory parties the proprietors of the Works can offer favorable terms and arrangements.

Letters may be addressed to

R. B. SUMNER,  
No. 61 Camp Street,  
New Orleans;

and further information may be had by applying to Messrs. BARSTOW & POPE, Pine Street, New York.

## Railroad Iron Via Quebec.

JOHN ANDERSON & Co.,

COMMISSION MERCHANTS,  
SHIPPING AGENTS AND BROKERS,  
QUEBEC,

PARTICULAR attention given to the Transshipment of Iron in Transit to the Western Lake Ports, likewise to the Shipment of Rails in Great Britain.  
Quebec, Dec. 2, 1853.

## Railroad Iron.

TWO THOUSAND TONS Erie Pattern, 55 lbs. to the yard, already shipped, and expected here soon—for sale by  
JOHN H. HICKS, 90 Beaver st.

1300 Tons Yorkshire T rail, weighing 56 lbs. to the yard, and of a superior quality daily due and for sale by,  
NAYLOR & CO.

## Oxford Furnace, N. J.

ESTABLISHED A. D. 1743.

THE Subscriber manufactures and keeps constantly on hand for sale, every variety and size of Railroad Wheels made from the celebrated Oxford Iron. All orders addressed to CHAS. SCRANTON, Oxford Furnace P. O., will be attended to promptly.  
Sept. 11, 1853.

## Valuable Works on Railroads, Railway Engineering, Steam Engines, &amp;c.

LARDNER'S RAILWAY ECONOMY, 1 vol. \$2 00  
THE STEAM ENGINE, STEAM NAVIGATION, ROADS AND RAILWAYS, Explained and Illustrated by Dr. LARDNER, 8th Edition, revised and improved..... 2 00  
TREDGOLD ON THE STEAM ENGINE, 3 vols., 4 to., 1/2 calf..... 50 00  
TREDGOLD'S PRACTICAL TREATISE ON RAILROADS AND CARRIAGES..... 1 50  
PORTWINE ON THE STEAM ENGINE... 50  
BURGOYNE'S ART OF BLASTING ROCKS, QUARRYING, &c..... 31  
TREATISE ON TUBULAR AND GIRDER BRIDGES..... 81  
BAKER'S LAND AND ENGINEERING SURVEYING..... 62  
BAKER'S RAILWAY ENGINEERING AND EARTHWORK..... 1 50  
PRIDEAUX ON ECONOMY OF FUEL.... 81  
SEWELL ON STEAM AND LOCOMOTION Vol. 1..... 81  
HERBERTS ENGINEERS AND MECHANICS ENCYCLOPEDIA, 2 Vols..... 9 50  
GARRS RAILWAY LOCOMOTION AND STEAM NAVIGATION..... 1 75  
TRAUTWINE ON EXCAVATIONS AND EMBANKMENTS..... 1 00  
Imported and for sale by JOHN WILEY, 167 Broadway, New York.

## N. York and N. Haven R. R.

## NOTICE OF SUMMER ARRANGEMENTS,

Commencing Monday, May 9, 1853.

TRAINS FROM NEW YORK.	TRAINS TO NEW YORK.
7 A. M.—Accommodation for New Haven.	8.30 A. M.—Special, from Port Chester.
8 A. M.—Express for Boston, stopping at Stamford and Bridgeport.	9.00 A. M.—Commutation from New Haven.
9.10 A. M.—Special for Port Chester.	9.15 A. M.—Accommodation from New Haven.
11.30 A. M.—Accommodation for New Haven.	9.35 A. M.—Express from New Haven, stopping at Bridgeport, Norwalk and Stamford.
8.00 P. M.—Express for New Haven, stopping at Stamford, Norwalk and Bridgeport.	1.07 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.
4.00 P. M.—Accommodation for New Haven.	4.00 P. M.—Special, from Port Chester.
6.00 P. M.—Express for Boston, stopping at N. Haven.	4.00 P. M.—Accommodation from New Haven.
5.55 P. M.—Commutation for N. Haven.	9.30 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.
6.30 P. M.—Special for Port Chester.	

GEORGE W. WHISTLER, Jr., Sup't.  
New Haven, May, 1853.

## Stuart, Serrell &amp; Co.,

CIVIL ENGINEERS,

Rooms 22, 24, 26 & 27,  
157 Broadway, New York.

CHARLES B. STUART,  
DANIEL MARSH,

EDWARD W. SERRELL,  
SAMUEL McELROY.

## New Works on Civil Engineering.

THE Field Practice of laying out Circular Curves for Railroads.—By JOHN C. TRAUTWINE, Civil Engineer—2nd edition in pocket-book form.

A new and rapid method of Calculating the Cubic Contents of Excavations and Embankments, by the aid of Diagrams.—By John C. Trautwine, Civil Engineer—with 10 Copper Plates.

Price One Dollar each—postage on the Curves Three Cents—and on the Excavations and Embankments Six Cents.

For sale by

WILLIAM HAMILTON,  
Hall of the Franklin Institute,  
Philadelphia.

May 4, 1853.

## ESTABLISHED 1796.

McAllister & Brother,

OPTICIANS and Dealers in Mathematical Instruments, at the old established stand, 48 Chestnut street, Philadelphia, Pa. Mathematical Instruments separate and in cases, Protractors, Spacing Dividers, Drawing Pens, Ivory Scales, Tape Measures, Balometers, Spy Glasses, Microscopes, Spectacles, Hydrometers, Platina Points, Magic Lanterns, etc., etc. Our Illustrated and priced Catalogue is furnished on application and sent by mail free of charge.  
Nov. 16, 1850



# **\$1,000,000 LITTLE MIAMI RAILROAD COMPANY SIX PER CENT. FIRST MORTGAGE BONDS FOR SALE.**

OFFICE OF WINSLOW, LANIER & Co.  
No. 52 Wall-st., Oct. 6, 1853.

**THE LITTLE MIAMI RAILROAD COMPANY** offer for sale one million of their **SIX PER CENT. BONDS**, with coupons. Interest and principal payable in New York, the former half-yearly, 1st of November and 1st of May. They are in sums of \$1,000 each, payable the 1st day of May, 1858.

These Bonds are issued under the express authority of the Legislature of the State of Ohio; and are a part of the \$1,500,000 Loan authorized to be issued by a vote of the stockholders, for the purpose of raising means to make a double track; the greatly increased and increasing business of the road makes this absolutely necessary.

The Little Miami Railroad is eighty-four miles long, commencing at the City of Cincinnati and terminating at Springfield; is now in complete running order; has cost, including equipments, stations, station-houses, &c., up to this date \$2,708,109 19.

This Company hold stock in the Columbus and Xenia Railroad Company to the amount of \$886,000, which now commands a premium of 20 per cent. Also, in the Hillsborough Road the amount of \$11,716.

The receipts of the Road have been as follows:  
For the year ending Dec. 1, 1844. .... \$18,623 36  
For the year ending Dec. 1, 1845. .... 46,327 58  
For the year ending Dec. 1, 1846. .... 116,052 02  
For the year ending Dec. 1, 1847. .... 221,139 62  
For the year ending Dec. 1, 1848. .... 280,085 78  
For the year ending Dec. 1, 1849. .... 321,398 82  
For the year ending Dec. 1, 1850. .... 405,597 24  
For the year ending Dec. 1, 1851. .... 487,846 89  
For the year ending Dec. 1, 1852. .... 526,746 35  
The receipts from Dec. 1, 1852, to Sept. 1, 1853, 10 months were. .... 544,625 59  
For the same period year before. .... 411,797 06

Increase in 10 months. .... \$132,823 53

The position of this road, being the natural, shortest and most usually travelled route from Cincinnati and the vast country south and west of it, to the northern cities, must ever make it one of the most important and profitable lines in the country.

An inspection of a map will show its connections to be many and important. This road operates the Columbus and Xenia Road, and runs in connection with the Cleveland and Columbus Road; in fact they are now run as one line greatly to the advantage of all.

Regular annual 10 per cent. dividends have been declared since December, 1847, with an extra dividend of 5 per cent. in 1852. In 1852 two cash dividends of 5 per cent. were made.

The present surplus and reserve fund amounts to..... \$98,546 10  
The mortgage covers the entire line of road, costing to date... 2,708,108 19  
To be expended on double track, &c. .... 1,500,000 00

Value of security..... \$4,208,109 19

The security for the payment of these Bonds is one of the most ample character, being a first and only mortgage or deed of trust (excepting one of \$100,000 to the City of Cincinnati) on the Company's Road, Stations, Franchises, net income, &c., to J. F. D. LANIER, Esq., of this city, in trust for the bondholders, with ample power to take possession of the Road, its real and personal estate, franchises, &c., and to sell the same to the highest bidder for cash, if default be made in payment of interest or principal. The mortgage is for \$1,500,000, and cannot be increased.

The Stock owned by the Road in the Columbus and Xenia and Hillsborough Railways will much more than pay off the \$100,000 prior lien to the

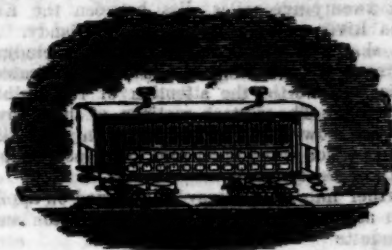
City of Cincinnati, and all other debts of the Company, excepting this loan of \$1,500,000.

These Bonds are offered at private sale by the undersigned, Agents of the Company.

Printed statements of the affairs of the Company, and any further information relative to the securities, will be given by

WINSLOW, LANIER & CO.,  
No. 52 Wall-st.

## **Elmira Car Manufactory.**



THE Undersigned is prepared to manufacture for Railroad Companies, Passenger, Baggage, Cattle, Freight, Gravel and Hand Cars, also Baggage Barrows and Freight Trucks.

WM. E. RUTTER.

Elmira, N. Y., June 1, 1853.

## **The Hamilton Car Company,**

ARE prepared to Contract for the Manufacture to order Rail Road Cars of every description, such as Passenger, Baggage, Freight, Dumping and Hand Cars, &c. &c.

Having ample facilities for Manufacturing at the lowest rates, and being supplied with Eastern Mechanics in every department under the Superintendence of H. P. Lanckton, who has had charge of T. W. Watson's well known establishment at Springfield Mass., for the last Six years, we can guaranty ours to be equal in style and quality to any manufactured.

Car Manufacturers and Rail Road Companies Supplied with Car wheels from the most approved patterns at the lowest prices. Castings of all kinds for Cars, Rail Road Bridges, &c. made to order at short notice.

Orders Respectfully Solicited.

Address, HENRY SIZER, Agent,  
Cincinnati Ohio.

Office 596 Fifth Street, Cincinnati, at Rail Road Depot Building.

## **Railroad Car Works.**

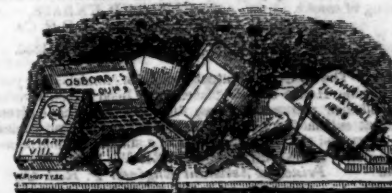
THE Undersigned are prepared to manufacture for Railroad Companies, Passenger, Baggage, Cattle, Freight, Gravel and Hand Cars, also Baggage Barrows and Freight Trucks.

F. HUNGERFORD & CO.

Maysville, Ky., Sept. 29, 1853.

## **Hufty's**

Engineers, Architects and Draftsmen's  
**STATIONERY EMPORIUM.**



**WHATMAN'S** Turkey Mill Drawing paper, Tracing paper, Plan and Profile, Protractors, Drawing Pins, Faber's, Jackson's and other makers' Pencils; Field, Level, and Memorandum Books of various patterns; Mathematical Instruments, Tape-lines, Mouth Glue, Cross Section paper, Triangles, Sabel Brushes, Gum Bands, Maiden Gum, Red Tape, Ink, Inkstands and Sand, Water Colors, Pallets, Patent Binders for letters, Portfolios, etc., together with a general assortment of Stationery and Blank Books. All goods packed with care, and forwarded to any part of the United States.

JOSEPH HUFTY,  
Successor to H. L. Lipman,  
139 Chestnut st., Philadelphia.

May 15, 1851.

## **Buffalo Car Works.**

TOWNSEND & COIT, Proprietors.

WE are now erecting an extensive Establishment for the manufacture of Railroad Cars, which will be furnished with all the conveniences known to the business, and ready for operation by the 1st day of June next, at which time we will be ready to execute orders for Baggage, Box, Platform and Cattle Cars, of the most approved style and finish. Meanwhile we are prepared to make contracts for work to be finished during the summer and fall.

TOWNSEND & COIT, Buffalo.

February 22, 1854.

## **A. N. GRAY, Cleveland, O.,**

RECEIVER AND FORWARDER of Railroad Iron, Chairs and Spikes

Also, Cars, Locomotives, and all kinds of Machinery for Railroad purposes.

Office next door to the Custom House, Main st.  
January 12, 1853.

**SIXTY MILES DISTANCE SAVED!—ONLY THIRTY-SIX AND A HALF HOURS TO CHICAGO.**

**MICHIGAN SOUTHERN RAILROAD LINE**, carrying the Great Western U. S. Through Mail—FOR CHICAGO AND ST. LOUIS, MILWAUKEE, RACINE, KENOSHA, and all Ports on Lake Michigan.—Through from Buffalo to Monroe in FOURTEEN HOURS WITHOUT LANDING.

The following magnificent and unequalled steamers from the line between Buffalo and Monroe:

**EMPIRE STATE**, J. WILSON, Commander, leaves Buffalo Mondays and Thursdays.

**SOUTHERN MICHIGAN**, A. D. PERKINS, Commander, leaves Buffalo Tuesdays and Fridays.

**NORTHERN INDIANA**, I. T. PERATT, Commander, leaves Buffalo Wednesdays and Saturdays.

One of the above splendid steamers will leave the Michigan Southern Railroad Line Dock, at 9 o'clock, P. M. every day, (except Sundays) and run direct through to Monroe without landing, in 14 hours, where the Lightning Express Train will be in waiting to take passengers direct to Chicago in 8 hours; arriving next evening after leaving Buffalo.

## **THE LAKE SHORE RAILROAD.**

runs in connection with this line, forming the only continuous line of Railroad to Chicago and the Illinois River.

For Through Tickets, by New-York and Erie and Buffalo and New-York City Railroad via Buffalo, or by the People's Line of Steamboats, Hudson River Railroad via Albany and Buffalo, apply to

JOHN F. PORTER, Agent,  
No. 108 Broadway, corner Dey-st., N. Y.

## **MONTREAL & NEW YORK AND Plattsburgh and Montreal RAILROADS.**

Open through from Plattsburgh to Montreal.

Passenger Trains leave Montreal for Plattsburgh at 6:30 a.m. and 5 p.m., arrive at 8 a.m. and 7:30 p.m.

Leave Plattsburgh for Montreal 7:30 a.m. and 4 p.m., arrive at 10 a.m. and 6:50 p.m.

Trains connect at Montreal with Steamers for Quebec, and the St. Lawrence and Atlantic Railroad for Sherbrooke and intermediate stations.

Trains connect at Moores Junction with Northern (Ogdensburg) Railroad for Ogdensburg and Lake Ontario Steamers for Lewiston, Niagara Falls and Upper Canada, and all ports on the Western Lakes.

Trains connect at Plattsburgh by Steamer to Burlington with Rutland and Burlington Railroad and connecting lines for Troy, Albany, New York and Boston, and all intermediate stations. Also with steamers for Whitehall to the Saratoga and Washington Railroad, and connecting lines of road to Troy, Albany and New York.

Passengers will find this route unequalled for comfort and dispatch, and attended with less fatigue and delay than any other. It possesses moreover the advantage of a short ferrage of only fifteen minutes across the River St. Lawrence at Caughnawaga, which has never been known to freeze, and can be confidently relied upon at all seasons of the year.

Freight Trains run daily each way.

For particulars see Freight and Passenger Tariff.

Baggage checked through.

H. W. NELSON, Superintendent.

## **New York and Erie R. R.**

PASSENGER TRAINS

leave Pier foot of Duane street, as follows, viz:—

**DAY EXPRESS**, at 6 a.m. for Dunkirk and Buffalo.  
**MAIL**, at 8 1/4 a.m. for Dunkirk and Buffalo, and all intermediate stations. Passengers by this train will remain over night at any station between Binghamton and Corning, and proceed the next morning.

**ACCOMMODATION**, at 12 1/4 p.m. for Delaware and all intermediate stations.

**WAT**, at 3 1/4 p.m. for Delaware and all intermediate stations.

**NIGHT EXPRESS**, at 5 p.m. for Dunkirk and Buffalo.

**EMIGRANT**, at 6 p.m. for Dunkirk and all intermediate stations.

On Sundays only one Express Train—at 6 p.m.  
The Express Trains connect at Dunkirk with the Lake Shore Railroad for Cleveland, Cincinnati, Chicago, etc., and at Buffalo with first class splendid steamers for Cleveland, Sandusky, Toledo, Detroit and Chicago.

CHAS. MINOT, Supt.

## Notice to Contractors.

## WARSAW &amp; ROCKFORD RAILROAD.

THE preliminary Surveys are now complete for the First Division, (about 120 miles) from Warsaw, through Nauvoo, Oquawka, Keithsburg, Rock Island and to Port Byron, including both Rapids of the Mississippi, and the location progressing. The character of the country is such, and the surveys so near to any location that will be made, that Contractors can satisfy themselves of the value of the work as well now as hereafter. Proposals are asked at the Office of the Company in Warsaw, Hancock County, Illinois, for the construction of the whole or part of the road, either by quantities or by the mile. Contract will not be made before the 1st of January, 1884, and only so soon thereafter as advantageous offers can be made. The Company are willing to make general contract, for cash or for cash and securities.

The route of the road is generally in the valley and second bottoms of the Mississippi, and the work can be completed very rapidly. The road is important as one of the improvements of the navigation of the Rapids, and also from its several (two at least) connections with other railroads.

WM. H. ROOSEVELT,  
President.

T. S. O'SULLIVAN,  
Consulting Engineer.  
Warsaw, Nov. 17, 1883.

## CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.  
Jan. 20, 1849.

## Railroad Iron.

2,000 TONS FIRST CLASS WELSH RAILWAY IRON, to be made to any ordinary T pattern required by the buyers, and for shipment from Newport, Wales, in December, January, and March next, apply to the undersigned, for many years connected with the largest house in the trade.  
JOHN H. AUSTIN & CO.,  
44 St. 2 Ingram Court, Fenchurch street London.

## A Valuable Farm in Illinois for Sale.

SITUATED in the Village of Seward's Point in Montgomery County 7 1/2 miles North of Hillsborough, about 36 South of Springfield the Capital of the State, about 18 West of the Illinois Great Central Railroad, about 4 or 5 North of the Allon & Terre Haute Railroad and about 18 miles West of the intersection of the two, containing 80 acres of rich prairie land.

Apply by letter or in person to  
S. S. ROCKWELL,  
No. 15 South Second str. Williamsburgh.

## To Railroad Companies, Machinists, Car Manufacturers, etc., etc.

CHARLES T. GILBERT,  
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—

Railroad Iron,  
Locomotive Engines,  
Passenger and Freight Cars,  
Car Wheels and Axles,  
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

## India-Rubber Railroad Car Springs, etc.

THE UNITED STATES CAR SPRING COMPANY, having completed their new Factory, are manufacturing and furnishing to Railroad Companies, and Car Builders, RUBBER SPRINGS of the best quality, on the most favorable terms. Also, McMillen's superior WHITE ROPE, not only for Railroads, but all other purposes, and of any size or thickness required.  
Office No. 25 Old street,  
Aug. 10, 1883. 2m New York.

## Notice to Contractors.

## COVINGTON &amp; OHIO RAILROAD.

PROPOSALS will be received, at the Office of the Covington and Ohio Railroad, in Covington, until the 15th of December next, for the graduation and masonry of about seventy-five miles of the above road; of which, the eastern portion, comprising fifty miles, lies next west of Covington, and the western portion, consisting of about twenty-five miles, lies between the Kanawha River and the mouth of Big Sandy. A large share of the work to be let—including bridging and tunnelling—is heavy and desirable, and is well worthy the attention of responsible contractors. The western sections of the above work are now ready for examination, and the eastern portion will be prepared for inspection by the 8th of December.

Further information may be obtained on application at the company's offices at Covington and Guyandotte

By order of the Board,  
CHARLES B. FISK,  
Chief Engineer.

N. B.—The Board of Public Works, of Virginia, under whose direction the Covington and Ohio Railroad is to be constructed, on State account, will meet, at Covington, on the 15th of December, above named, for the purpose of receiving and acting on the proposals that may then be offered.  
Nov. 10th, 1883.

## To Railroad Companies.

## COLLINS' PATENT VENTILATORS,

FOR

Ventilating all kinds of

PUBLIC AND PRIVATE BUILDINGS  
Railroad Cars, Depots, etc.

THE Subscribers would invite the attention of the public to the above celebrated Patent Ventilator. This Ventilator is the best one now known of, for giving pure air in rooms, and ejecting all foul air. It has been adopted by all the principal Railroad Companies and Car Factories, and is extensively used for private dwellings, and for the cure of smoky Chimneys cannot be excelled. Manufactured and for sale by

BAKER & WILLIAMS,  
No. 406 Market st., Girard Row,  
Sole Agents for Pennsylvania.

## CERTIFICATES.

Engineer Depart. P. R. R., Altoona, Feb. 8, 1883.

This is to certify that Messrs. BAKER & WILLIAMS, of 406 Market st., Philadelphia, have furnished a large number of Collins' Patent Galvanized Iron Ventilators for the P. R. R. Co., and that they have given every satisfaction, acting fully as represented. I consider them as a necessary appendage to an Engine House. We have them in use thirteen inches, and two feet diameter, acting equally well. So well satisfied am I of their usefulness, that the Engine Houses we are about building will be supplied with them at every point where a draft is necessary to free building of smoke.

STRICKLAND KNEASS,  
Principal Assistant Engineer P. R. R. Co.

Engineer Depart. P. R. R. Co., Pittsburgh, May 12, 1883.

Dear Sirs—The 23 Collins' Patent Ventilators furnished by you for the Engine House at this place, have been in use several months and their merits have been fully tested and have given most perfect satisfaction; being constructed on true principles of Ventilation, and the workmanship is of a substantial and superior character. Yours truly,  
OLIVER W. BARNES,  
Principal Assistant Engineer P. R. R. Co.

## Krupp's

## CELEBRATED CAST STEEL,

Which obtained the Council Medal at the London Exhibition in 1861.

Warranted unapproachable as to Quality and Size.

PLATERS and other Cast-Steel Rollers, of any dimensions not exceeding six feet long by eighteen inches diameter. Piston Rods and Shafts for Steam Engines, not exceeding 3000 lbs. in weight.

Railway and other Axles, Cranks, Springs and Tyres. Cannon, Rifle and Gun Barrels.

Mint and other Rolling Mills

Orders received by

THOMAS PROSSER & SON,

25 Platt street, New York.  
Sole Agents for the United States.  
Nov. 19, 1883.

## To Contractors.

CHIEF ENGINEER'S OFFICE, N. & P. R. R. Co.,  
Norfolk, Oct., 13, 1883.

SEALED PROPOSALS will be received by the undersigned at this office from the 3d, until the 15th day of December next, at noon, for the graduation and masonry of 62 miles of the Norfolk & Petersburg railroad between the city of Norfolk and Warwick Swamp in the county of Sussex.

The line will be divided into sections of about 4 miles, and bids will be received for one or more of said sections.

Maps and profiles of the line will be ready for inspection and specifications with forms of proposals may be had of the undersigned on and after the first day of December.

Payments will be made in current money during the progress of the work in proportion of four-fifths of the amount due.

As soon as practicable after the examination of the proposals, those to whom the work will be allotted will be duly notified, and if deemed necessary required to give bond with satisfactory security for an amount not exceeding one-tenth of the amount of work to be done.

The company reserves the right to accept such proposals as in their judgment will secure the prompt and faithful execution of the work according to contract, or reject all, if none are satisfactory.

The line is easy of access, the country through which it passes is of mild climate and abundant in supplies. Postage on all communications must be prepaid.

W. MAHONE,  
Chief Engineer.

## Small Rails.

THE SUBSCRIBERS manufacture and keep constantly for sale, Light Rails of the most approved patterns, weighing 22, 25, 28, 40 and 50 lbs per yard, suitable for Colliers, Miners, Quarrymen and Contractors, or for turn outs, depot and branch tracks.

CHARLES E. SMITH & Co.  
Fairmount Iron Works, Philadelphia.  
1744 CHAS. E. SMITH  
THOS. T. TASKER, HENRY MORRIS,  
WISTAR MORRIS.

## Drawing.

B. BLANDOWSKI, Topographical and Ornamental Draughtsman and Designer. Maps accurately drawn, enlarged or reduced from notes or copies. Ornamental designs for decorations, furniture, fences and ornamental foundry work. Architectural designs. Drawings from nature carefully prepared.

REFERENCES. MESSRS. Miller and Freund, Lignaceous Marble Works, corner of Franklin and Center streets, New York. Also H. V. Poor, Esq., Editor Railroad Journal, and Zerah Colburn, Assistant do.

Address, care of Railroad Journal, 9 Spruce street New York.

## Henry I. Ibbotson,

MANUFACTURER OF

## FILES AND SAWS,

Warranted of superior quality.

Office and Warehouse, 218 Pearl st., New York.

## Book and Job Printing.

The undersigned have added to the PRINTING ESTABLISHMENT of the "RAILROAD JOURNAL," an extensive OFFICE for BOOK AND JOB PRINTING, which they are now prepared to execute in the BEST manner, and with DISPATCH. They respectfully solicit from RAILROAD COMPANIES, orders for the PRINTING of Exhibits Time-tables, Circulars, Tickets, &c., &c.

J. H. SCHULTZ & CO.

New York April 9, 1883.